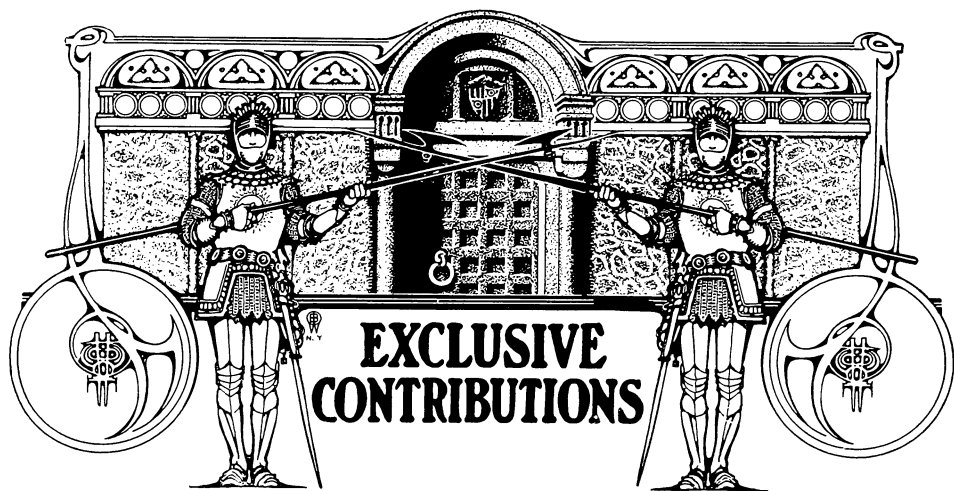


DR. FREDERICK HARVEY LEE



Methods of Filling Teeth with Gold Inlays.*

By DR. THOMAS P. HINMAN, Atlanta, Ga.

Cavity Preparation.

It is pre-supposed that the canals and pulp chamber have been properly filled. The mesio-gingival wall is cut flat with a square end fissure bur and all frail over-hanging enamel cut away until firm tissue is reached. The linguo-mesial enamel is trimmed away with a chisel and flared well to the angle. The buccal enamel where it is frail is cut away until firm tissue is reached. The shape of this buccal margin is to a certain extent indicated by the conditions found in each separate case, care being taken, however, to have the gold cover all enamel which would be liable to fracture during the stress of mastication.

In the distal morsal surface, a large doll-head is formed for the retention of the filling. This should be done with a fissure bur, as there is less liability of leaving undercuts when this bur is used.

Polish the enamel margins with a small rubber and carborundum stone. If the gum laps the mesio-gingival margin, it should be packed away with cotton, allowing the cotton wedge to remain a couple of days before attempting to make the matrix. When all margins are clear and accessible, the cavity is ready for the matrix. In cases of this description, the pulp chamber is used for partial retention (Fig. 6o).

* Copyright, 1906, by T. P. Hinman.

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Making the Matrix. Cut a piece of inlay gold sufficiently large to lap well all the cavity margins, as well as to allow itself to be pressed down into the pulp chamber, without being drawn away from the margins, leaving them uncovered. Place this piece of inlay gold between the cavity and adjoining tooth, carrying it down so that it will lap well the gingival margin. Press to place with a piece of wet cotton, wedging the cotton between the matrix and the adjoining tooth. Bend the matrix metal backward and press it down over the cavity with the index finger of the right hand, forcing it as far down with the finger and thumb as possible.

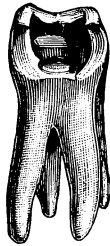


FIG. 60.



FIG. 61.

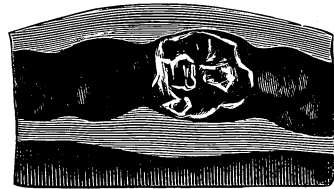


FIG. 62.

With the matrix held in place with the left hand, the gold is forced to the bottom of the cavity with a large pledget of wet cotton held in the pliers. Mallet on this cotton with the automatic mallet, using the orange-wood plugger heretofore described.

Remove the cotton from the tooth and mallet directly against the gold with the orange-wood plugger, driving it in close proximity with the floor and margins. With a round ball burnisher, press the gold in the dollhead on the morsal surface, burnishing it well to the margins of this anchorage. Remove the matrix and trim approximately, leaving about 1-32 of an inch to all the margins. The marginal lines should show plainly on the complete matrix. Re-anneal and return to the cavity, burnishing all margins with a round burnisher and the lap with a flat one.

Any tears in the bottom of the matrix should be mended with gold cylinders, pressing them in position and packing them lightly with a large ball burnisher. Remove the matrix from the cavity and thicken with 22K solder, care being taken to prevent the solder from running over the margins or spreading on the inside of the matrix (Fig. 61). This is accomplished by using the large brush flame of the blowpipe, removing the heat as soon as the solder has melted. Return to the cavity and reburnish

the margins. The matrix is now ready for the impression and bite. With modeling compound dry heated, take an impression and bite, forcing the material well to the buccal surfaces of both the upper and lower teeth. This is accomplished by the use of the fingers, while the patient is holding the teeth tightly together.

Chill the compound thoroughly and remove from the mouth; the matrix should come away with the compound. If it does not, it can be

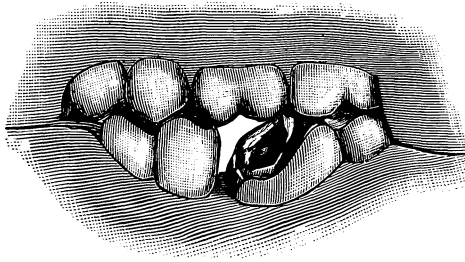


FIG. 63.



FIG. 64.

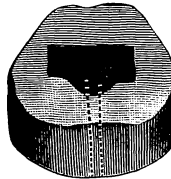


FIG. 65.

removed from the cavity and placed in position in the impression (Fig. 62). The side containing the matrix should be run in sump and set in a small crown articulator. When this is hard, run the bite side in plaster. Warm the compound and remove from the model and bite. Swage a cusp of inlay or 36G gold and trim it to fit and restore the lost parts on the morsal surface. This cusp should be made to slightly lap the matrix margins on the morsal surface and fit well up to the adjoining tooth so as to reproduce the necessary knuckle.

Restore all the lost portion of the tooth with hard wax, covering the buccal and lingual sides with 1-1000 contour gold, burnishing it to the wax with the fingers and a warm flat burnisher. These pieces of contour

gold should slightly lap the cusps, so as to prevent the investing material from running between the cusps and the wax. Chill the wax thoroughly; punch a hole through the cusp near where it joins the matrix on the morsal surface. Cut the tooth containing the matrix from the model; make a small roll of wax 1-16 of an inch in diameter and 1-4 of an inch long and attach to the cusp, allowing it to cover the vent hole previously described. This piece of wax stands out parallel with the long axis of the tooth (Fig. 63). Invest the tooth and matrix with distal surface downward, covering everything with the investing material except the wax on the mesial surface which has not been covered with gold.

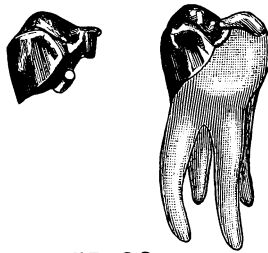


FIG. 66.

When the investment is thoroughly hardened trim it as small as possible, cutting down toward the morsal surface until the vent wax is reached. Boil out the wax thoroughly. The vent wax leaves a small opening clear through the investment (Fig. 64), so that when the solder melts, air will not be caught under the flowing solder and produce bubbles; the air being vented through the small opening. Fill the inside of the matrix, cusp and contour gold, with creamed borax. Fill the matrix with small and large pieces of solder, piling it up above the level of the investment. Heat up from below. Do not use the flame on top until the mass is ready to melt. A broad brush flame from the blowpipe is used on top to melt the solder. The mass should be melted rapidly, so as to practically cast the filling. If the inlay is not sufficiently full when the mass is melted, add more solder until a correct contour is obtained. A little experience will soon show how much solder to use. 20K solder is used for filling the matrix and finishing the inlay. When the solder is thoroughly congealed, drop the investment in water; this will facilitate the removal of the investing material.

**Finishing and
Setting the Inlay.**

Heat the inlay over an open flame and drop in the acid bath. This will remove all the oxide and borax. Fit the inlay in the cavity, in the mouth, grinding the approximal surface so as to make a correct contour and knuckle. On the reverse side of the inlay, where it fits into the pulp chamber, solder a piece of iridio-platinum wire, the ends pointing bucco-lingually (Fig. 65). This is to give additional anchorage. Deepen the pulp chamber sufficiently to accommodate this piece of wire. Polish and finish the approximal surface. Roughen the inside of the inlay with a small bur. It is now ready for cementation.

Protect the cavity from moisture, drying it thoroughly. Wipe out the cavity with alcohol, as this leaves a clean surface to which the cement may adhere. Mix the cement to the proper consistency and smear it all over the cavity, being sure that it covers the margins. Put some of the cement on the inside of the inlay and drive to place. I always use hydraulic cement for this work so that as soon as it reaches the proper stage, which is usually two or three minutes after cementation, I may remove the napkins and allow the moisture to come in contact with the inlay. When the cement has thoroughly set, remove the excess and proceed to polish the inlay, always grinding and polishing toward the margins, as this makes a closer and neater joint.

Instead of using a small crown articulator in which to mount the model and bite, it may be done by running the model in sump, and when it has set, trim the upper surfaces on an inclined plane, the thickest portion of this incline beginning at the modeling compound on each end of this bite impression and becoming gradually thinner at the extremities.

On each of these planes make a small hole with the point of a pocket knife. Varnish these planes and run the bite-half in plaster. When the plaster is hardened and the modeling compound is removed, you have a small home-made articulator that is sufficient for all practical purposes (Fig. 66).





Discussion of Dr. McKay's Paper.

Dr. Milton C. Watson,
Detroit, Mich.

In regard to this much discussed subject of extraction let me say that any criticism I have to offer is not intended to reflect upon men who resorted to this practice in years gone by, for at that time no better way was known; but I confess I am at a loss to understand how any man can defend it as a *practice* to-day. In my home city, I am glad to say, we have little to fear along this line, because the better men there have come to see the folly and unwisdom of such a course. Among the men who have attained more or less national prominence, we are able to count on the fingers of one hand all who are still vigorous in the defense of this practice, and even among these the need for extraction, from their point of view, is growing less. We are all reasonable enough, I think, to admit that there may be cases which may be characterized as unusual freaks of nature, where better results, from an esthetic standpoint, may be obtained by the extraction of one or more teeth. The number of teeth to be extracted in such a case is a matter of personal opinion, a point upon which we may honestly differ, so that we can hardly hope for a unanimous verdict. In the treatment of all the characteristic types of malocclusion, presenting the usual conditions, I think there are not above three men of prominence in orthodontia who consider extracting necessary, or even permissible. Almost a unanimous verdict, is it not? I can see one potent reason why men may differ in their judgment as to the need for extracting which is simply this: a man treating according

to a certain plan might consider extraction necessary, while in the hands of another man with a plan of treatment whereby any or all of the molars might be carried distally, extraction would not seem at all necessary. The individual skill of the operator is an ever-present factor. The argument is sometimes put forth that it is necessary because of financial or other reasons to adopt some short cut, but this can in no way affect the fundamental principles, and hence has no place in such a discussion.

To illustrate: Suppose a child fifteen years old should be brought to you from a country hamlet—where treatment could not be secured—who presented a case of the Subdivision of the Second Division of Class II, with the cuspid crowded outside of the arch but all the other teeth symmetrically arranged in a small dental arch. The question for you to decide is, would you rather have the child go through life with the cuspid in that condition or extract the bicuspid and let the cuspid come down of its own accord? Suppose you decide in favor of the latter, is that an argument in favor of extraction rather than expansion and the retention of all the teeth? Not at all. There is a right way, and a mere emergency which caused you to digress should not establish a precedent by which you will be guided in future cases.

In order that we may do our full share toward removing any barrier from the path of science or art, let me suggest that the term, "New School," be used less frequently and offensively, and the more modest expression, "Modern orthodontia," be used in its stead, for that will offend no one, but will include every one of high and honest ambitions. We must not forget that the knowledge possessed to-day has come to us in a large measure because of the accumulated evidence resulting from other modes of practice. The principal influence which brought this society into being was a desire to teach and preach the truth, and to do good to humanity, and if there are any expressions, any little peculiarities of speech, employed by us which grate upon the sensibilities of any one, let us be generous and courteous.

I am going to make one criticism of Dr. McKay. He has committed the grievous error of saying what some "old school man," as he is pleased to call him, would do with a case which he has shown us. Let us not convict a man until the crime is committed. The Doctor falls into the same error that the gentleman whom he criticised fell into when he assumed that we would treat all cases of the second class alike.

**Dr. G. P. Mendell,
Minneapolis, Minn.**

I heartily endorse Dr. McKay's paper, but Dr. Watson's suggestion that we call ourselves something other than the "New School," to make us less offensive, does not seem to me well taken. The offense seems to be because we have separated ourselves from the other

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school, but that, of course, we are obliged to do because we do not believe what they believe and they do not believe what we believe.

**Dr. R. B. Stanley,
New York.**

The terms "New School" and "Old School" have given rise to many discussions, and even bitter feelings, since they have come into use. Whether there is or is not a New School or an Old School it is clearly evident to those who studiously follow the many articles published in the dental journals that there exist two widely different standards from which the basis of treatment is determined. On the one hand it is held that normal occlusion of the teeth is incompatible with any degree of irregularity and is the accompaniment of harmonious facial lines: a doctrine which places the treatment of malocclusion upon a definite basis. Contrary to this it is asserted that the occlusion can be normal and yet have an irregularity, or be accompanied by inharmonious facial lines: a doctrine which does not place the treatment of malocclusion upon any definite basis, but leaves it to the individual to determine in any given case whether the Lord intended this one of his creatures to have a full complement of teeth and yet possess the composite facial lines inherited from the various types of his ancestors. Note, that the difference between these two teachings lies not in the assertion that teeth can or can not be placed in anatomically correct positions, but in the conception of what constitutes harmonious facial lines.

To be strictly impartial to both sides of the question it is absolutely necessary to deal with actual clinical experiences. To state a hypothetical case, or to show models or photographs which do not truly represent the conditions existing, or to omit to cite the smallest detail in connection with the case or cases offered in proof or rebuttal of a theory, is no only unfair to those who conscientiously desire to learn the truth, but is the greatest impediment to progress.

Our essayist has quoted some of the misconceptions of the New School teachings which are held by a few prominent men in the dental profession, and has voiced the sentiment of his fellow workers in protesting against the persistent disinclination of the opponents of the New School to follow the progress it has made. The attacks seem to be centered principally upon the early teachings of the New School, while that which is offered to them through the later dental journals is ignored. Our essayist has cited several examples of this nature, as follows: One writer quotes from the sixth edition of Dr. Edward H. Angle's work to sanction the extraction of one upper bicuspid in a case of Class II, Division II, yet his apparent faith in that writer's teachings failed to interest him in the more recent publications which have appeared in the

journals. Another critic of the New School will not divest himself of the idea that its followers aim to fashion unto an Apollo Belvidere all those coming under their care, and further misinterprets the New School principles with regard to the use of the intermaxillary force. Still another critic feels so strongly the great amount of harm which is being done to humanity by the New School coterie that he deems it his duty to openly protest against the successful efforts of these orthodontists in saving so many teeth from the hands of the extractor. He denounces them as "non-extractors" and then tries to make them out as untrue to their beliefs when the question "What shall be done with supernumeraries?" is answered, "Extract."

Through all these attacks the New School is diligently working, working, working, getting nearer and nearer to the time when all will see and believe; and when that time comes the question of which tooth to extract will be buried forever. Already the atmosphere shows signs of clearing. We see this in the tendency of orthodontists of the Old School to consider the facial lines in conjunction with the malocclusion and an endeavor to so mold the two arches of teeth that a perfect balance in the lines of the face will result. The New School claims, and produces accurate models and photographs to substantiate its claims, that normal occlusion is accompanied by harmonious facial lines. It teaches definite means of correcting malocclusion, and gives a comprehensive classification of the types of malocclusion as a means of correct diagnosis. It is the only school that has successfully spread its principle and practice. What a contrast between that and the Old School, which offers nothing definite in the diagnosis, prognosis, or treatment. "Each case is a law unto itself," is the only definite doctrine that is preached. It can never be otherwise so long as the sacrifice of one or more teeth enters into the treatment of malocclusion. The New School is termed such with a ring of disparagement and scorn by many who claim it has given nothing new to the dental profession. They claim to have always understood what constitutes normal occlusion, yet in the same breath speak of extracting a lower central incisor in order to harmonize the sizes of the two arches of teeth. The conclusion must be that there is a New School and an Old School, differing in vital principles to such an extent that thought of conversion from one to the other seems almost hopeless. Yet this is precisely what is taking place. New supporters of the New School are springing up every year in large numbers, many of whom are from the ranks of the Old School. It will take many years to make converts of all, yet that time is coming just as surely as the years roll by.

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Dr. W. O. Calbot,
New Orleans, La.

In reading the literature of what is termed the New and the Old School, it seems to me there are two principal points of difference between them. First, and most important, is the difference in the ideas that practitioners of orthodontia have about occlusion. The New School holds that normal occlusion is the basis of the science of orthodontia, and therefore the ideal to be produced in the treatment of malocclusion; that by far the larger per cent. of all cases are amenable to such treatment, and when so treated the best possible results are obtained. The Old School does not accept these claims as true. They believe less in the importance of establishing normal occlusion, and therefore resort more to extraction to facilitate the alignment of the teeth in the arches; claiming that a larger percentage of cases may be so treated than the New School will admit.

The next point of difference is that of art. There is a difference of opinion as to what facial harmony really is. Where one of the older practitioners would deem it advisable to extract in Class II and bring the upper anterior teeth back, we would not consider it at all necessary, but would think it better to bring about a harmony in the facial line by moving the lower jaw forward. It seems to me that if we could agree on these two principal points, there would be much less difference between the New and the Old School. It does not make so much difference as to the appliances that are used. If the two schools could get together and have an artist criticize our photographs and models of cases, as those were criticized last evening, it would cause many of us to see these conditions alike, and would help the dental profession to secure better results in the treatment of malocclusion.

Dr. F. H. Pullen,
Buffalo, N. Y.

I wish to compliment the essayist on the great amount of work he has done in producing this paper. He has made it very plain that there exist two different schools of thought and method in orthodontia, which appear at the present time to be somewhat antagonistic. I do not wish to criticize the essayist any more than I would myself or any other member of the society who may assume the defense of the well-proven theories of occlusion, and the deduction therefrom, but I think it is the intention of the members of this society to refrain from unpleasant personalities, however much the heat of argument may otherwise incline us. As harmony is one of the very much beloved words in connection with out art, just so it should be one of the very much beloved words in connection with our relations with those who are seriously opposed to us in doctrine and practice. It is farthest from our thoughts to create offensive antagonism among those who have been designated as the "Old

School." Dr. McKay has very favorably portrayed the points of difference between the "Old" and "New" School methods and I am sure, that, with no intention of personally offending any one, he has left no room for doubt as to the merits of the questions at issue.

Dr. C. M. Milan,
Little Rock, Ark.

I recognize the fact that there is a right and wrong way open to you and me. Right antagonizes wrong. Antagonism precipitates conflict. Conflict results in death to wrong, increased life to right.

I am always ready to be sacrificed fighting the wrong. Some old practitioners would rather die than be convinced of their errors and confess they had taught and practiced wrong. They will extract teeth because they have always so advised and practiced. They think their prestige forever gone should they confess to the public they were wrong. When I meet these old men who are so sensitive I am willing to let them be sensitive; just simply rub it in until it takes the hair off. (Laughter.)

Yes, we are a new school. We have walked out of darkness into light. For forty years I have refused to pull crowded teeth and some of my patients have gone around for years, as they say, "with a tusk sticking out," while others pulled them out. They have asked me why I refuse to pull them and I say, "God put them there and the devil or wrong has been 'monkeying' with your mouth and I don't propose to disturb the devil nor have anything to do with him or wrong." Unless I can destroy the effect of the devil and remedy the wrong, I will leave it alone. (Laughter.) I live in Arkansas, too, and have pursued this course for forty years.

Dr. H. B. Ketcham.
Denver, Colo.

I want to say something about the extraction of the upper first bicuspid in the subdivision of the second division of Class II. Dr. Watson's remarks seem to leave the impression that it might be permissible when the cuspid is in labial occlusion where the patient did not have the means or the time to have the orthodontist treat the case. Now in those cases I think it is a great deal better practice to leave the tooth as it is, and tell the parents that some day they will probably have the means and time to have the case attended to properly. We all know that any country physician, dentist or veterinary can extract a tooth if it must be done, then the cuspid may settle back. Out in Colorado, if a person is poor to-day, but has the average amount of brains and industry, he will be in comfortable circumstances in a short time, and able to provide for the treatment.

I did not for one moment advance my own judgment as to what should be done in this case. I merely brought up the point for the sake of argu-

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ment that if in such a case the first bicuspid was extracted, we would not need to consider it as proof against the *wisdom* of retaining all the teeth. It is simply an emergency, in which a man's judgment might dictate that it would be better to extract than to do nothing.

I take it that the profession in general will base
Dr. Eloyd S. Lourie, Jr. their opinion of modern orthodontia on the pub-
Chicago, Ill. lished proceedings of this society, and if this paper,
with its discussion, represents the ideas of this so-
ciety as to what modern orthodontia is, we will let the discussion pass.

I believe that Dr. Watson has explained what exception we would take to Dr. McKay's paper, and my view would be to emphasize those remarks.

Dr. McKay's paper in so far as it criticized the methods of the Old School is perfectly just, but I do think his enthusiasm got a little the better of him in ascribing to them methods of treatment in hypothetical cases. I think that this correction should be made.

In preparing this paper my object was to state
Dr. F. S. McKay. as strongly as I was able, what I considered a strong
subject. My particular reason in stating it in such
a manner was to draw the contrast critically between the present day
methods and teachings and those methods and teachings which have had
their place and served their usefulness in times past; not for the sake
of finding fault, but because of the attempt to perpetuate these theories
and practices that have been proven to be erroneous and productive of
harm. In reading the writings of our critics one can readily detect the
underlying feeling, when the term "new school" is used, and if the im-
putation is not, that there is not, never was, and can not be any such
thing as a "new school," then your essayist's judgment is all wrong.

The terms "full protrusion" and "full retrusion," I had hoped would
be discussed by this society more fully. Your failure to discuss these
terms leads me to the inference that they have no special significance to
the "new school."

Report of Case From Practice.

Dr. E. H. Angle. I have a case of considerable interest to report,
or rather it is the continuation of the report of a case
which I presented in part at a meeting of this society three years ago in
Philadelphia. In regard to the case I at that time said (I quote from the
transactions of that meeting): "Here is one case (Figs. 1 and 2 which



FIG. I.

represent the face of the patient before and after treatment) in which it may have been an error to have retained all of the teeth. It was so decided by Mr. Wuerpel, the eminent teacher of art, who says that the lips have been made too prominent, this being the only case of a large number examined that he has so criticised. Now we can see reason for his criticism. The lips are perhaps over-prominent to be in best balance with the rest of the features, but even here I believe I am right, for let us remember two conditions existing here, which dentists, artists, and 'old school' practitioners of orthodontia never seem to have considered.

"First, while the teeth are developed to full size, the development of the bones of the face is far from completion—the nose, the forehead, the chin, will all be different at maturity, and, I believe, in far greater harmony with the present sizes of the teeth.

"Second, the lips, in this case, are temporarily over developed by reason of a habit frequently contracted, especially in nervous patients, that of working the lips more or less constantly on account of the presence of the appliances in the mouth, thus tending, as in all muscles, to increase in



FIG. 2.

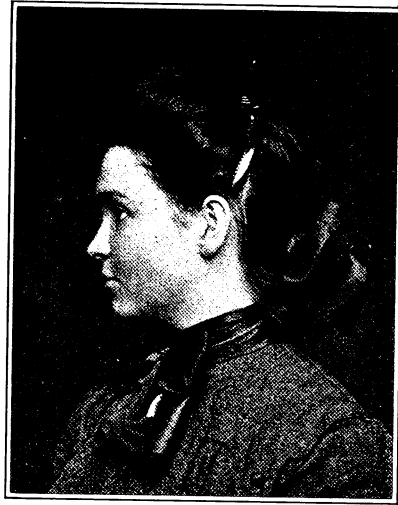


FIG. 3.

size with increased exercise, but when the cause is removed they speedily return to their normal size. I have noticed this in a number of cases. So I believe that in five years the correctness of my theory, namely, *that the best balance, the best harmony, the best proportions of the mouth in its relations to the other features require in all cases that there shall be the full complement of teeth, and that each tooth shall be made to occupy its normal position*, will be proven also by this case. If possible I shall at the proper time again publish the picture of this face."

It is, therefore, with much pleasure that I can to-day show you the likeness of this young lady as she appeared before the camera in January last (Fig. 3), and leave you to judge whether my prophecy has been verified.



An Accurate Method in Orthodontia.*

By C. A. HAWLEY, D.D.S., Columbus, Ohio.

At the Fourth International Dental Congress, at St. Louis, Mo., it was the privilege of the writer to read before the Section on Orthodontia, a paper entitled "The Determination of the Normal Arch and Its Application to Orthodontia," a paper in which was presented a method of accurately planning beforehand any proposed change in the form of the arch, or locating in advance the new line of occlusion.

The Line of Occlusion.

The line of occlusion has been defined by Dr. Angle as "the line of the greatest normal occlusal contact," and in the lower arch, passes over the crests of the buccal cusps of the molars and bicuspsids and the cutting edges of the cuspsids and incisors; in the upper arch it will be found along the sulcus, between the buccal and lingual cusps of the molars and bicuspsids and across the lingual surfaces of the cuspsids and incisors, about one-third the length of those surfaces from the incisal edge. The method referred to above, and which forms the subject of this paper, locates this line of occlusion directly in the lower arch. In the upper arch, it locates a line passing through the crests of the buccal cusps of the molars and bicuspsids and the cutting edges of the incisors and cuspsids and from this line the line of occlusion proper is easily found. In either case the line determines the shape, the width and the length of the arch.

On the occasion of the presentation of the former paper and since that time, fears have been expressed that, in bringing into orthodontia a mathematically and geometrically calculated plan, we would restrict or eliminate the feature of artistic judgment, and that the method leaves no room for the exercise of judgment in changing the form of the arch to satisfy the requirements of the various types.

These fears or objections have been due to a misconception of the elasticity of the method in its application. In this paper, I wish to add something to the clearness of presentation of the method, and, in reply to the above mentioned objections, will make the proposition that, in so far as hampering, in any way, the use of judgment in the art requirements in orthodontia, this method lays down the most valuable principles and forms

* This paper has been read before two societies, one in New York, and one in Europe, and has appeared in *The Journal*. It is republished here with entirely new illustrations.—Ed.

ITEMS OF INTEREST

the most important basis upon which artistic results in orthodontia must be accomplished; and, instead of restricting the variation of the arch to correspond to different types, it forms the only safe guide for procedure in such variation.

The mathematical features of the denture comprised are in the occlusion of the teeth and the form of the arch or the line of occlusion. The normal occlusion of the teeth has been observed by Dr. Bonwill and

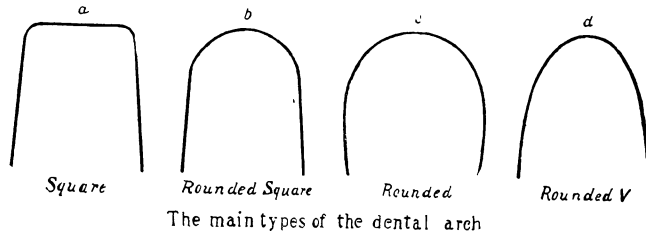


FIG. 1.

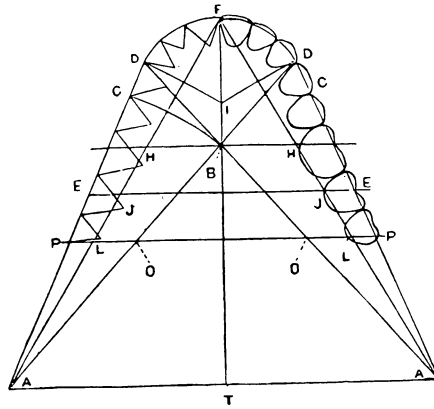


FIG. 2.

others, and has been made the basis of modern orthodontia by Dr. Angle. There remains no question concerning the normal and most desirable occlusion of the teeth or the desirability of restoring and preserving that occlusion, wherever possible.

The Ideal Form of Arch.

The ideal form of arch is determined with some difficulty and we might admit that there is no ideal arch for all cases. Dr. A. H. Thompson has made extensive observations of the form of arch in differ-

ent races and gives us the following typical forms: Fig. 1. "The square arch," he says, "is found usually in persons of strong osseous organization, of Scotch or Irish descent, *i. e.*, Gaelic extraction." * * * "The rounded square is the medium arch usually found in ordinary, well developed Americans." * * * "The rounded arch is quite characteristic in some races, as the brachycephalic South Germans." * * * "The rounded V is the arch of beauty and that most admired in women of the Latin races."

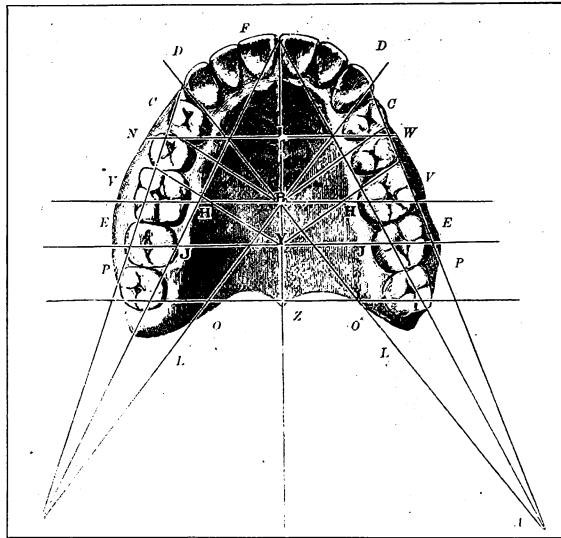


FIG. 3.

Dr. Bonwill, in his work on the Articulation of the Teeth, examined, as he says, 4,000 dentures in living persons and 6,000 skulls, and, from these observations established as a standard an arch based on the equilateral triangle and conforming closely to the most perfect arches found. This arch (Fig. 2) is not exactly the form of any of the types illustrated by Dr. Thompson, but seems to be a combination of the rounded square and the rounded V, as might be expected, when we consider that Dr. Thompson is presenting distinct racial types and Dr. Bonwill an ideal, selected from the most perfect dentures found in his investigations. This Bonwill arch conforms essentially to the typical arch illustrated in Dr. Black's "Dental Anatomy," as shown in Fig. 3, taken from the "Text Book of Prosthetic Dentistry," by Essig.*

* This conformity would be closer if the Bonwill diagram were correctly drawn. In the illustration, the triangle is not equilateral, the sides being longer than the base.

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While Dr. Bonwill's efforts were, in the main, directed toward the application of his principles to the construction of artificial dentures, yet he seemed to realize their value in orthodontia, for he says, "The study of these laws will enlighten you in the true science of correcting irregularities." And if his work really disclosed the correct principles of the natural movement of the jaws, and this seems to be established beyond question, then any science of orthodontia that aims at broad and com-

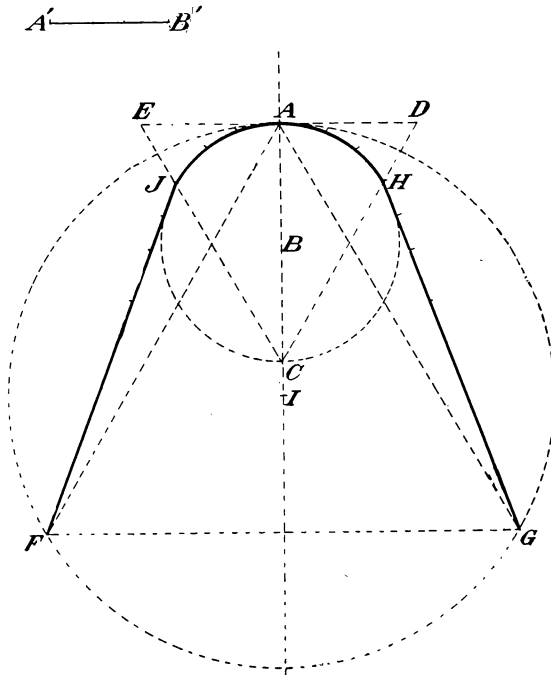


FIG. 4.

prehensive work must take into account these principles and produce in the living jaws the conditions that make their normal movements possible by establishing the normal occlusion of the teeth and the size and form of arch to correspond to the size of the teeth and the probable width between the condyles.

In Fig. 4, we have Dr. Bonwill's geometrical figure, an equilateral triangle, $A F G$, inscribed within a circle, its base $F G$ representing the distance between the condyles, which varies in the living subject from 3 to 5 inches. According to his plan, in artificial dentures, the teeth are

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arranged with the cuspids and incisors in the arc of the circle A J C H, the size of which varies according to the size of the teeth selected for the case, and this selection is left to the judgment of the operator.

In order to use this principle in orthodontia, where we have the size of the teeth given us, and from their widths the diameter of the circle A J C H, we must reverse the order of procedure and find a connecting relation between this circle and the equilateral triangle A F G, or the circle within which it is inscribed. This connection is not described in

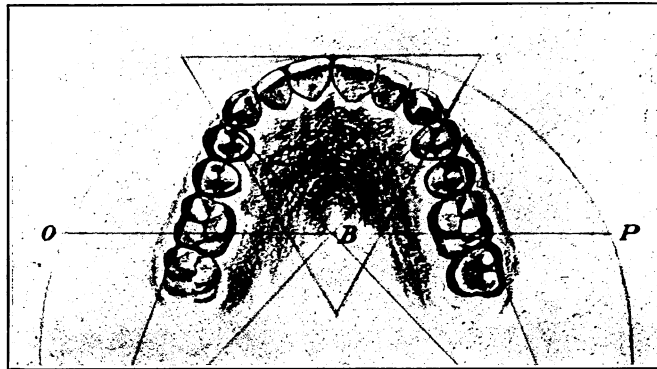


FIG. 5.

Dr. Bonwill's writings, so far as I have been able to find. It is found in the triangle E D C, constructed with its apex at the point C, on the diameter of the circle A J C H, and its base tangent to the same circle at A, the sides passing through the points J and H, located on the circle by the distance of the radius from A.

In application, to construct the diagram, we take the radius of the circle A J C H from the combined widths of the central lateral and cuspid teeth shown at A B. With this radius A B, upon the line A C, which becomes the extended diameter of the circle, draw the circle A J C H and, with the point of the compass at A, mark off the radius upon the circumference at H and J. We have here the arc of the circle upon which the six front teeth are to be arranged, but know nothing of the size of the triangle A F G. From C draw the lines C E and C D, through H and J, extending them indefinitely and draw a tangent to the circle A, cutting these lines at E and D, and forming an equilateral

Mode of Making the Diagram.

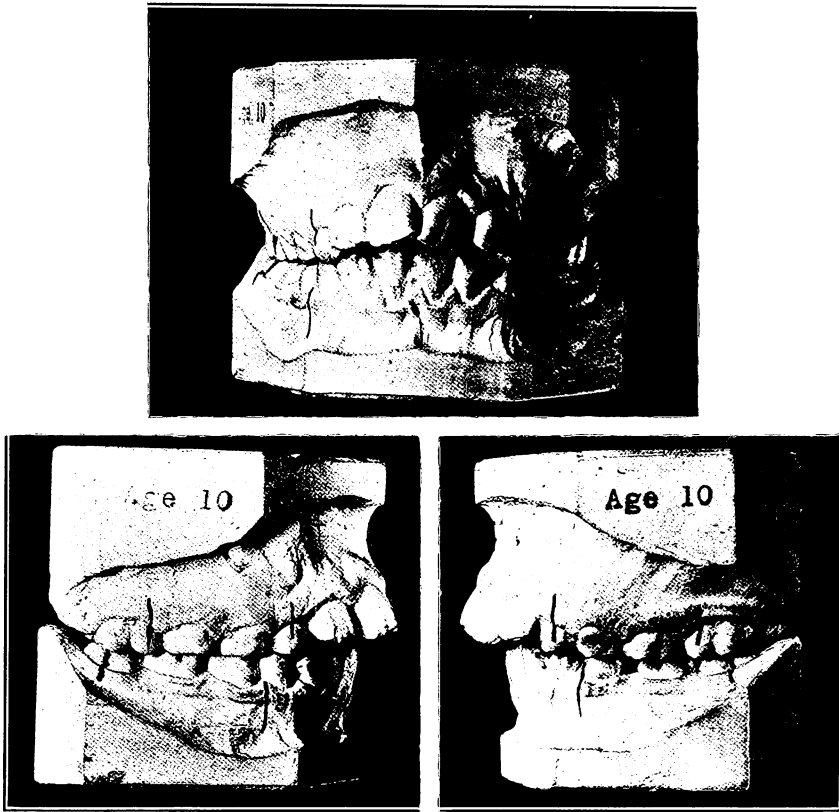


FIG. 6.

triangle E C D. Take one side of this triangle as a radius and with one point of the compass at A, and the other upon the extension of the diameter at I, describe the large circle A F G. We can now mark off the radius six times on the circumference of this circle and, connecting the intervening points, draw the triangle A F G. Then draw the lines F J and G H and we have the desired diagram or arch upon which we may measure off the teeth with the width as found in the mouth.

The teeth can then be drawn in full, as shown in Fig. 5, which is the plan I adopted in my first working with this method, or the single arch line can be used. The former method was of great advantage to me at first, giving a better view of the completed work.

Mode of Using the Diagram.

My present method of working is shown in the following case: Class II, Div. I, Age 10, of which Fig. 6 shows front and side views. The deciduous molars and cuspids are present. The method of calculating this arch will be explained later. Fig 7 shows the occlusal views of both upper and lower teeth. The arch is transferred to a piece of transparent celluloid* and by placing this in proper position on the model, every movement necessary to correct the case is accurately shown.



FIG. 7.



FIG. 8.

Also the shortening of the arch is shown and this is very valuable in calculating the effect of the proposed movement on the outlines of the face.

I wish to call your attention here to the small degree of expansion indicated in the lower, compared with the upper, jaw. In this type of cases, this fact indicates that the narrowness of the upper jaw has forced the lower backward, as the causes which operate to narrow it do not obtain in the lower and it seeks a distal position in order to obtain a com-

* The use of a transparent substance was first suggested to me by Dr. L. P. Bethel. All the illustrations which show the diagram of the arch are slightly vague because the models were photographed with the celluloid diagrams in front of them.

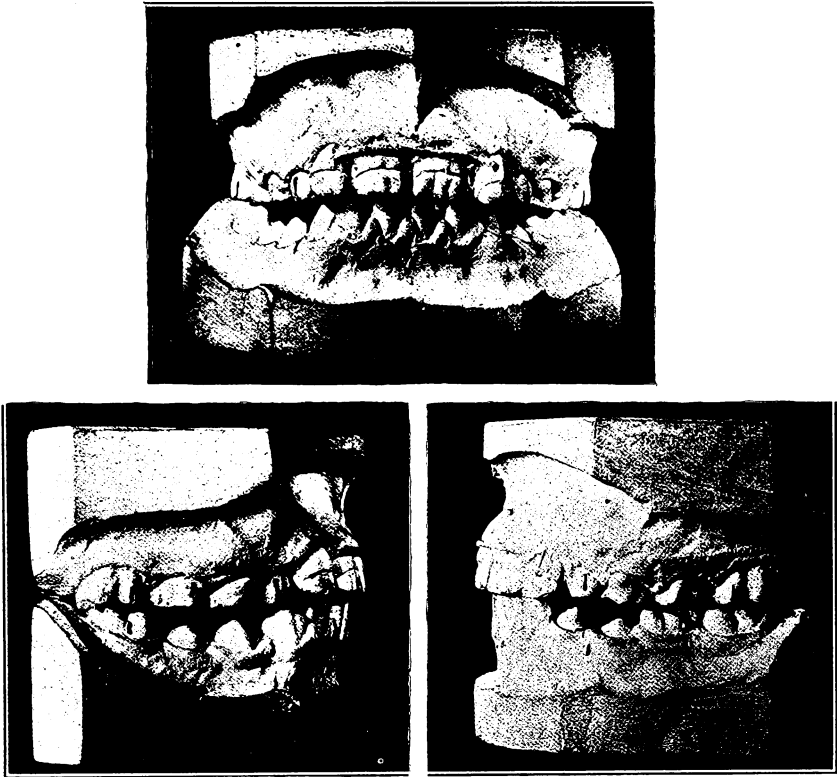


FIG. 9.

fortable occlusion. Thus the condyles are carried back to an abnormal position in the glenoid fossa. This is indicated, too, by the fact that frequently when the upper arch is widened, the lower comes forward easily and never requires mesio-distal retention more than that furnished by the cusps of the molar teeth. This fact was brought forcibly to my attention by the study of cases of this kind with the diagrams. The diagram is used in the progress of the case as a constant check on the movement, measuring in the mouth with compasses, from time to time, and comparing with the diagram. Or if one wishes, the celluloid can be placed in the mouth at any time and the positions of the teeth noted there directly. Fig. 8 shows the occlusal views of this case finished, and Fig. 9 the front and sides.

In the next case (Fig. 10), the upper molars are in lingual occlusion, and the question would arise (Fig. 11) as to whether the lower

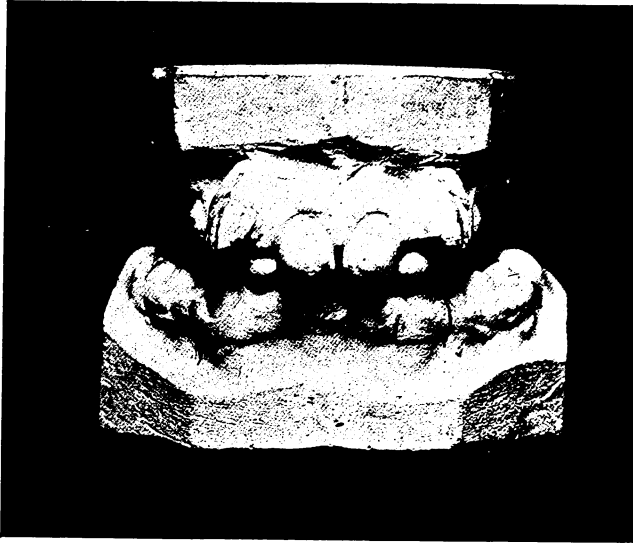


FIG. 10.



FIG. 11.

molars had been pushed outward. The shortening of the arch and the absence of the second molars give that appearance. But (Fig. 12) the diagram shows that this is not true, and indicates the desired movement in both arches. Fig. 13 shows the completed arches and (Fig 14) occlusion of the finished case. These two cases I will consider sufficient to illustrate the method of work.

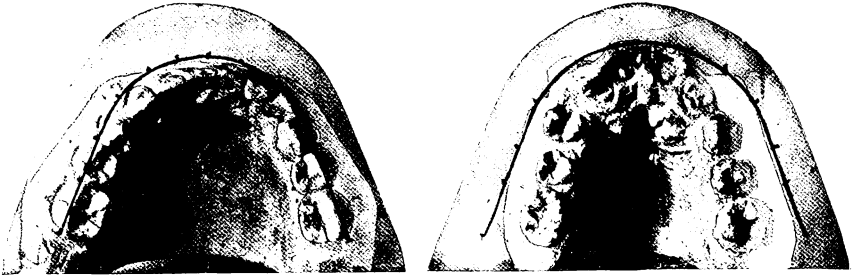


FIG. 12.

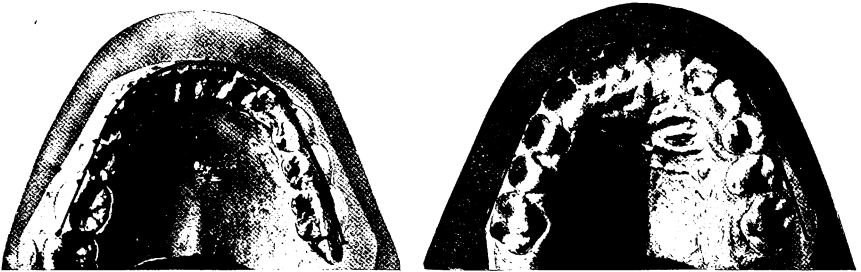


FIG. 13.

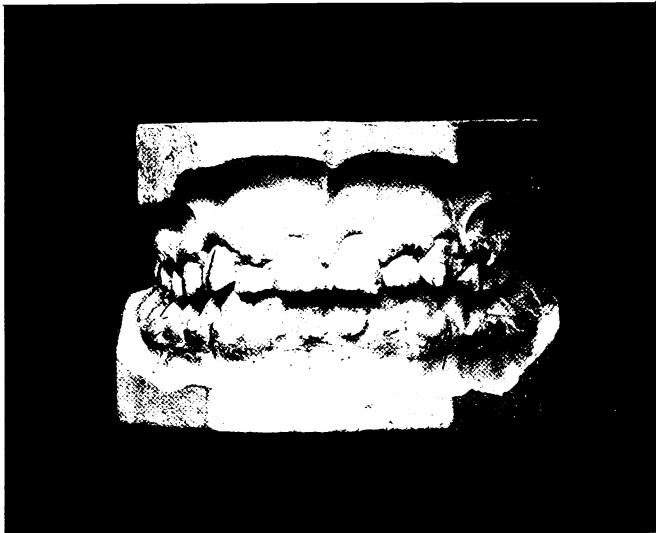


FIG. 14.

I did not formerly, nor do I now, wish to be understood as insisting on this form of arch in detail in every case. If a uniform arch were to be adopted, this one of Dr. Bonwill's would undoubtedly be the nearest adapted for universal application. It is a standard, capable of being produced by exact geometrical and mathematical rules, and conformed to any size of teeth. Without, myself, at this time discussing the question of how closely we

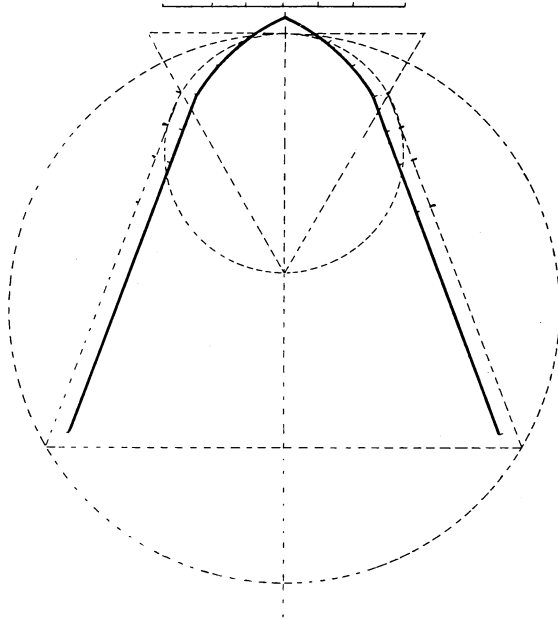


FIG. 15.

should conform our work to this arch in all cases, I wish to quote for your consideration the opinion of Dr. William J. Brady in a paper entitled, "Some Points Concerning Occlusion," read before the American Society of Orthodontists, at St. Louis, June 12, 1901. Referring to the Bonwill arch, he says: "The fact is, that if nature were not thwarted in her purpose, every dental arch would be upon these perfect lines. The mechanics of the case compel an arch of this form to permit of the highest usefulness and the mechanical forces of mastication produce this arch as nearly as possible. Even in malocclusion the teeth follow this perfect form just as much as the mechanics of the case admit. The mechanics of the case demand an arch of a certain definite form, because of fixed and unchangeable laws, and not because somebody thinks it ought to be that way

or because it makes a pretty diagram on paper. As long as the jaw comprises an equilateral triangle, and rotates upon one condyle at a time, when moving laterally, just so long will this form of arch be the one unvarying end that nature tries to attain in her way, and the one final result that we should seek in our work. Until the lower jaw changes its form or its motion, all men will (or should have) arches of the present form, and race, color, temperament or hobby, fad or ism will not change the facts in the least."

My own argument, at this time, is for its use as a standard, a basis of diagnosis and study and the accurate and systematic planning of the work, estimating beforehand what we wish to accomplish, and working quickly and accurately to that end. We should not attempt to change the form of any arch without a definite end in view. It will greatly lessen the discomfort to the patient and the time for the operation. In my own work, in the study of cases, and as a guide in their progress, this method has been invaluable.

**Variation
of the Arch.**

To illustrate a plan of making variations from the standard arch, we will refer to Fig. 15, where we have the standard Bonwill arch and a pointed arch drawn from it. The Bonwill arch represented is the arch for the size of teeth in the case. If we wish the pointed arch to be one quarter of an inch narrower, we draw the lines for the molars and bicuspsids one-eighth of an inch within the standard arch on each side. The narrower arch will necessarily be longer than the Bonwill, and here we have the choice of carrying the molars backward and leaving the lips stationary or of leaving the molars in their place and carrying the lips outward. Similar calculations could be made for a wider arch. We may thus make calculations for any type and any temperament, and this accurate calculation lays a safe foundation for artistic results in orthodontia. This foundation also opens the way for a scientific examination into the question of types and temperaments, in their relation to the teeth, a question about which we know little that is of value.

By restoring normal occlusion and a form of arch in harmony with the size of the teeth, that will admit the natural movement of the jaws, we will thus, so far as the mechanism is concerned, obtain the natural development of the denture. And in retention, we will guard most effectively against any final retrogressive changes that might take place, by conforming the arch to the natural mechanical forces of the jaws. From the artistic side of the question, while nature may not, in all cases, have furnished teeth exactly adapted to the individual, yet in the present development of orthodontia, the hypothesis that she has is a safer basis of work. For, when we consider all the evils of extraction as set forth by

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many men and especially by Dr. E. A. Bogue, we, indeed, must hesitate to trust our conceptions of improvement by mutilation, as compared with the utility of the denture when the teeth are placed where nature intended they should be.

Tooth Measurement.

So far, in dealing with this subject, we have presumed that the centrals, laterals and cuspids were erupted or that the denture was practically completed. But to be scientific and progressive, orthodontia must assume an attitude of prevention in early life. This necessitates a recognition of dwarfed and abnormal conditions as soon as they appear. Very early in the use of this method, I found that in a large number of cases coming into my hands, the necessary data could not be obtained. Most often the cuspids were unerupted, and, in many cases, the laterals also. My first recourse was to measure the central incisor, then refer back to a case previously treated, having a central of the same width, and, presuming that the teeth were always in proportion, use that arch. This method was adopted in the case illustrated in Figures 6, 7, 8 and 9. While furnishing a fairly accurate guide, the variations that were at once apparent led me to enter into an investigation of the proportionate widths of teeth, as they occur in the same mouth, with the object of establishing a series of approximate arches for use in young patients. For this purpose, I have collected measurements of over 100 sets of teeth,* using the following forms:

Collection of.....
 Model No.....
 Sex
 Age.....

Upper.		Lower.	
Right.	Left.	Right.	Left.
Cent	Cent	Cent	Cent
Lat	Lat	Lat	Lat
Cusp	Cusp	Cusp	Cusp
1st Bic.....	1st Bic.....	1st Bic.....	1st Bic.....
2nd Bic.....	2nd Bic.....	2nd Bic.....	2nd Bic.....
1st Molar.....	1st Molar.....	1st Molar.....	1st Molar.....
2nd Molar.....	2nd Molar.....	2nd Molar.....	2nd Molar.....
3rd Molar.....	3rd Molar.....	3rd Molar.....	3rd Molar.....
Width of Original Arch.....		Width of Original Arch.....	
Width of Expanded Arch.....		Width of Expanded Arch.....	

* In this work of collecting measurements, I have received valuable assistance from Drs. E. H. Angle, Frederick McKay, J. L. Young, Herbert Pullen, L. P. Bethel and Walter Ellis.

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Dr. Black, in his "Dental Anatomy," has published a table of measurements of the teeth, in which is found the extent of variation in their mesio-distal width, but without reference to their variation in the same mouth. Selecting these measurements, we have:

Central Incisors .....	.31 to .39
Lateral Incisors.....	.19 " .29
Cuspids Incisors .....	.27 " .35
First Bicuspid .....	.27 " .31
Second Bicuspid .....	.23 " .31
First Molars .....	.35 " .47

It will be noticed that, with the exception of the first bicuspid and first molar, there is a uniform variation of 8 points, the first bicuspid making 4, one-half that amount, and the molar 12. These measurements do not represent the greatest extremes, but those occurring outside these figures are rare. Now, if the teeth were found in the mouth in the same proportion in respect to their greatest and least width, that is, if with a .31 central, we would find a .19 lateral, a .27 cuspid, .27 first bicuspid, .23 second bicuspid and .35 molar, and so on with each size of central, we could make out the radius of each size central and from these draw proportional diagrams. But such is not by any means the case. With a .31 central, we often, in fact usually, find a lateral .26 or .27, and the cuspid may be quite small or well up in the scale, or we may have a central and lateral in good proportion and the cuspids much larger. In order to discover the nature of this variation, I selected from the 100 measurements all the cases of each width of central, and made of each of them a table. The number of cases of each size central was .31—15, .32—7, .33—16, .34—16, .35—9, .36—14, .37—13, .38—5, .39—2. A number of the 100 cases I was unable to use, on account of missing teeth or so great variation as to question the accuracy of measurement.

Collecting each of these sets, I have nine tables, of which this one of the .35 central is an example:

CENTRAL	LATERAL	CUSPID	1ST BIC	2D BIC	1ST MOLAR
.35	.24	.31	.27	.27	.41
.35	.28	.31	.29	.30	.41
.35	.25	.30	.25	.25	.42
.35	.28	.31	.28	.27	.42
.35	.27	.33	.29	.29	.44
.35	.24	.30	.30	.28	.41
.35	.28	.33	.29	.26	.40
.35	.26	.30	.27	.27	.43
.25	.27	.32	.27	.27	.41
Average:					
.35	.27	.31	.28	.27	.42

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Taking the average of the widths of the other teeth, I have the average width of teeth that will occur with each width of incisor and from these averages the average radius which will give us the probable arch for each size central.

CENT'L	LATERAL	CUSPID	1ST BIC	2D BIC	1ST MOLAR	RADIUS	CORRECTED RADIUS
.31	.26	.29	.26	.26	.39	.86	.86
.32	.26	.30	.27	.26	.40	.88	.88
.33	.27	.30	.28	.27	.41	.89	.90
.34	.28	.30	.28	.28	.42	.92	.92
.35	.27	.31	.28	.27	.42	.93	.94
.36	.28	.32	.28	.28	.42	.96	.96
.37	.28	.32	.30	.29	.42	.97	.98
.38	.28	.34	.30	.29	.44	100	100
.39	.31	.34	.31	.29	.44	104	102

In the last column I have placed what I will call the corrected radii, in which we get an ascending gradation. I wish, at this time, to point out the nearly uniform gradation of the first molar and later refer to its significance. Now, taking these corrected radii, we will get an arch for each width of central and I will propose these as a basis of diagnosis, study, and treatment of cases where only part of the teeth are erupted, or under the age of 12. Or using the radius in hundredths of an inch for comparison they may be used as a guide for all cases, for where we can measure all the teeth we have only to select the diagram with the correct radius, and measure in the teeth. Remembering that these arches are only averages and smaller or larger teeth will constantly occur in connection with the particular central, is there any indication by which we can judge in which direction this variation will occur, *i. e.*, toward smaller or larger teeth? I think we have this in the first molar and this tooth is always present at the time of the eruption of the central incisor. As the first molar varies up or down from the average width, I believe the rest of the teeth will vary. For instance, we will suppose we have a case in which the central incisor is .34 and the first molar .42. If I had a second case with the same size central, but with the first molar .44, I would presume that the lateral and cuspid and all the rest of the teeth would be likely to be large and would select the next larger arch. In this way I think we have the key to a pretty accurate judgment of the future denture. In making up these averages, I have tried to err, if at all, on the side of the larger arch, believing if we do get the arch slightly larger than the teeth will fill, if it is properly shaped and the teeth are placed in normal occlusion, as the excess will, at the worst, be only a few hundredths of an inch, the pressure of the cheeks and lips, the influence of the occlusal planes and the

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pressure forward of the second molar in eruption will close the spaces. Nature has given us an example of the wisdom of this provision by making the combined widths of the temporary molars considerably more than that of the bicusps, which are to take their places.

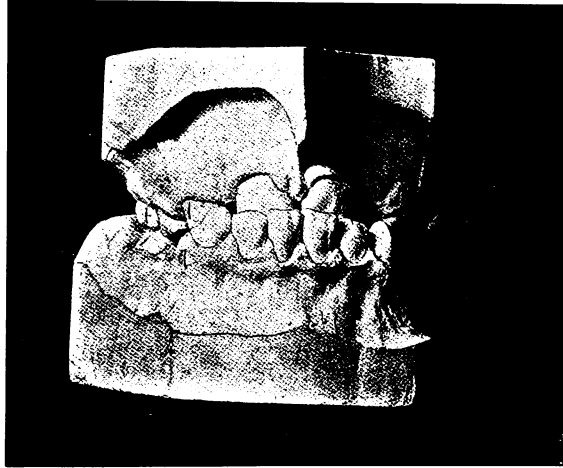


FIG. 16.



FIG. 17.

Similar tables were made for the lower teeth, and the result makes it evident that the uniformity of lower arches, drawn from the measurements of the lower incisors and cuspids, is not to be depended upon. While the lower bicusps and molars are fairly uniform in their relation to the upper, within the same mouth, the incisors and cuspids are not.

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This lack of uniformity is probably compensated for in the inclination of the teeth and the overbite. Without discussing these variations at length, I wish to advise that instead of drawing the lower arch from measurements of the lower teeth, as described in my former paper, the radius for the lower be taken from .13 to .23 of an inch shorter than the upper, de-

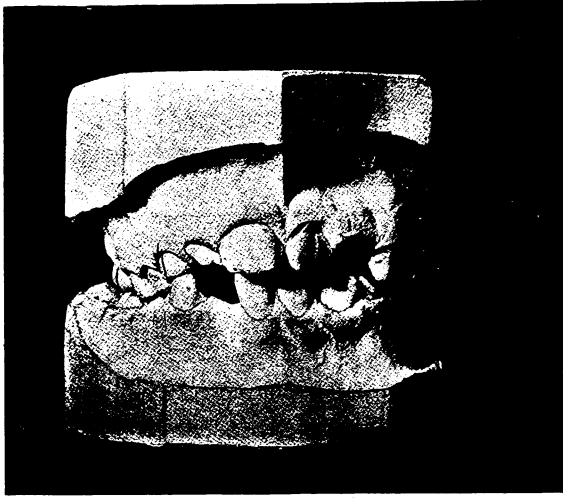


FIG. 18.



FIG. 19.

pending within this variation on the size of the teeth or the distance from the line of occlusion to the crest of the buccal cusps.

In illustration of my use of these arches, let us take the case of a child

eight years of age, Fig. 16. We have here erupted of the permanent upper teeth, only the central incisors and first molars, and in the lower the centrals, laterals and first molars. All of the deciduous molars below have been extracted and the first deciduous molars above. The arches are consequently contracted, especially the upper, in which the centrals are in lingual occlusion. The centrals are .33 wide and the molars .37, while the average molar for that diagram is .41. As the molar is small, I judge we are likely to find small laterals and possibly bicuspid, as these are the teeth that vary most, so I would select no larger arch than that for .33.



FIG. 20.

I chose to develop this arch to the largest safe point, because the child has had an operation for the removal of adenoids and needs all the development of the nasal passages possible. Fig. 17 shows the development of the arch that will be necessary.

In Fig. 18, we have another case, also a child of eight, in which the occlusion is developing into distal. Fig. 19 shows the occlusal view of the upper teeth. In this case we have a .38 central and .42 molar, while the scale gives us a molar .44, so we will use the .38 arch and expect fully developed teeth.

It might be argued that it is unnecessary to widen this arch with the temporary teeth at this time; that the natural growth of the jaw will be sufficient to make room for the teeth. But you can not place the incisors in alignment without either widening the arch or placing them considerably forward of their proper position. If the whole arch is widened, the

crowns of the developing bicuspid are carried with the temporary molars and the chances of their erupting in malocclusion is greatly lessened.

In regard to the question that may arise as to whether the first molars, when they erupt, should normally be in their proper bucco-lingual positions, the study of cases by this method leads me to believe that they should. Notwithstanding the fact that few children have been brought up under conditions where the teeth have been properly and normally used,



FIG. 21.

yet I have found enough cases where they have erupted in their full bucco-lingual width, to, I think, justify me in the above conclusion. One of these, a boy of seven, I will show in Fig. 20. Fig. 21 shows the occlusal view. The incisors are .34 wide, the molars .44, which is .2 larger than the average, and are in their correct bucco-lingual position, as is shown by the diagram.

Enough has been shown to illustrate this method and allow you to judge of its value. There are many other interesting points in connection with these measurements that may prove valuable, but their discussion is not within the limits of this paper.

Again, in conclusion, as to the matter of types, without raising the question here as to how much variation is required in the different races and temperaments or whether such variation is desirable at all, or as to whether we are not safer in our present knowledge on the subject to sacrifice a possible improvement in artistic effect, to greater utility, by conforming to the Bonwill arch; without discussing these questions, I will say that the only safe basis upon which to make such variation is a carefully calculated arch from these measurements. And as to variation for

artistic effect of any kind, as mathematics is the basis of architecture, music, painting and all the arts and sciences, so I believe will these principles underlie the best that we will accomplish along these lines in orthodontia.

It is perhaps unusual to present a paper on a subject pertaining to orthodontia, without any reference to appliances, but I have little to say

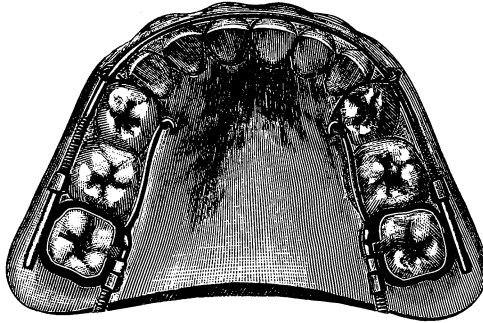
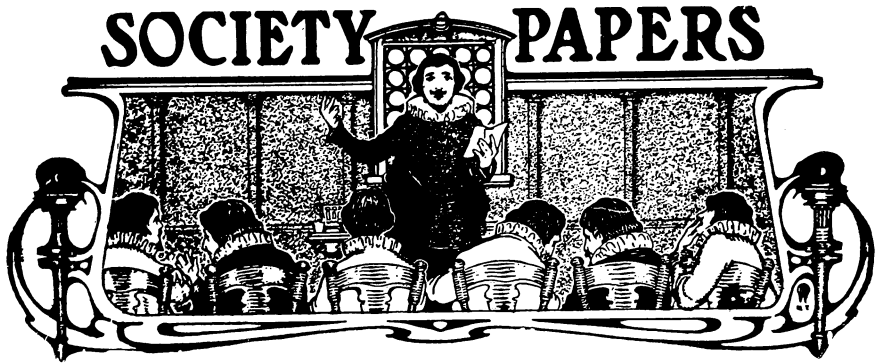


FIG. 22.

on that subject at this time. The only appliance that I have used, with which I could have the necessary control of all the teeth, is the expansion arch. There is just one point in using this appliance, that may be essential to the argument of the paper. In moving the temporary molars and cuspids we find their great constriction at the neck and the consequent abrupt slope of the enamel allows the ligatures to work under the gums too far and cause irritation. To obviate this trouble, I reverse the clamp bands on the second temporary molars, where possible, and carry a wire along the lingual surface to the cuspid. It is soldered to the clamp band at the mesio-lingual angle shown in Fig. 22, on a model in which the clamp bands are on the sixth year molars, and the lingual wire is extended only to include the two temporary molars. The principle is, however, the same. With this lingual wire in place, we have only one ligature necessary on each side and the wire holds so that it can not slip down upon the gums. This arrangement is also valuable in many cases of fully erupted dentures.



Therapeusis and Treatment of Interstitial Gingivitis Due to Autointoxication.

By EUGENE S. TALBOT, M.S., D.D.S., M.D., LL.D., Chicago, Ill.

Read before the New Jersey State Dental Society, Asbury Park, N. J., July, 1906.

Former research has been confined to etiology, pathology, and diagnosis; I intend here to discuss treatment. For more than a decade I have paid special attention to constitutional treatment of patients that have required such services. This has been a most fascinating as well as satisfactory research. For reasons elsewhere mentioned, interstitial gingivitis due to autointoxication first manifests itself in the alveolar process. In therapy it was therefore necessary to examine the gastro-intestinal canal, liver, urine, and blood pressure.

Of one hundred and fourteen patients under consideration sixty-four had received local treatment by other dentists and obtained more or less temporary benefit. Later the disease had returned. The patients ranged from thirty-eight to sixty-nine years of age. All had symptoms of auto-intoxication. Eighty-two had more or less headache, eight at times had sick headache and vomiting, six were irritable, forty-six were fatigued. These symptoms were due, no doubt, to the open winter. It was difficult for the eliminating organs to adjust themselves to the unusual climate of Chicago. Seventeen had muscle soreness and itching; twenty-two had neurasthenia to a more or less marked degree accompanied with neuritis; eleven had cutaneous eruptions; seven had arterio-sclerosis; sixteen had rheumatism; nine had albuminuria; two diabetes; twenty-nine were more or less nervous; six had asthma; ten were markedly constipated; eighty-four had gastro-intestinal fermentation which produces indol in the small intes-

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tines and indicanuria. The other twenty may have also shown indican since urinalysis in all patients with interstitial gingivitis has shown it. Thirty-two had flatulence to a marked extent; twenty-six had sour stomach; eight had had syphilis and seventeen gonorrhea; four had tuberculosis; two had pleurisy; nineteen had been previously salivated; one hundred and seven showed above normal blood pressure; all had interstitial gingivitis.

In treating such patients the stomatologist must be as familiar with general diseases as the physician. He must be more alert than the general practitioner, for the reason that the stomatologist can forewarn his patient of the oncoming storm, while the physician usually is not called until it has already broken.

The trend of medicine is toward prophylaxis. The stomatologist in treatment of interstitial gingivitis has the advantage of the general practitioner since he is thereby able to prevent the tendency to more grave disorders. Many times have I told my patients after urinalysis, that they were suffering with autointoxication which required treatment. They would later return with the statement from the family physician that they were in perfect health. Had the family physician recognized the tendency to grave disease portrayed in the mouth, his diagnosis would have been far different. The patient with interstitial gingivitis due to autointoxication is sick so far as the stomatologist is concerned, although able to come to the office and attend to his duties. He is not sick in the eyes of the family physician since the symptoms have not markedly manifested themselves constitutionally. When the organs are involved, although interstitial gingivitis be present, it is beyond the province of the stomatologist to treat such conditions. The attending physician should be informed. I have saved patients from an early grave by anticipating a tendency to grave disease avoidable by strict attention to diet and treatment. In other patients, where grave symptoms were observable, I was able to inform the family physician in time to prevent serious result. In a few, it was impossible to prevent rapid progress of disease already well advanced when they came under notice. There are people in their graves who might be alive and well had they changed their methods of living when requested to do so. Club life and fast living have carried many a man and woman to an early grave. More people are injured by overeating than overdrinking.

Early Symptoms of Autointoxication. The first symptoms of pathologic effects due to autointoxication are observable in the alveolar process. In the treatment of interstitial gingivitis, the stomatologist should be mindful of the fact that the patient's system is tending toward disease.

After more than ten years' research, I am able to give a reliable treatment which graduates of any reliable dental school may prescribe with perfect safety and positive results.

In my discussion of "Interstitial Gingivitis due to Autointoxication as Indicated by the Urine and Blood Pressure," I reported fifty cases. Every examination showed want of balance in the eliminating functions. Accumulation of waste products in the system means interference with oxidation as well as imperfect elimination. In most cases this interference with the oxidation and imperfect elimination is due, first, to the senescent and tired out eliminating organs. With age the bowels, kidneys, lose tone, and as a result waste products or toxins circulate in the blood. Between twenty-five and forty, odors emanate from the lungs in the breath, from the armpits and about the thighs. The skin and the lungs are trying to do the work of the bowels and kidneys.

Constipation and want of proper attention of the bowels. This is particularly true of women. The fact that there are one, two, or even three loose movements of the bowels each day does not demonstrate elimination. A twenty-seven-year-old woman had been feeling uncomfortable for some time. There were no marked symptoms. She felt tired, face drawn, skin and eyes had a bluish color, headaches, and pain in the back. The alveolar process was tender and as she expressed it "itchy," teeth sore to touch. Urinalysis revealed specific gravity 1007, reaction acid, albumin trace, urea 0.7 per cent, indican, degree of acidity twenty in lieu of thirty to forty-five. She had one, sometimes two movements a day. The bowels, however, were packed with fecal matter. Her physician requested her to flush her bowels with warm water and call the next day. On return still more fecal matter was found. Four similar treatments were required before the bowels were cleared.

A fifty-six-year-old woman had been treated locally by a dentist for eight years. Her teeth grew worse each day. The alveolar process was nearly destroyed; most of her teeth were banded. When she came to me she had a tired look, face drawn, skin and eyes discolored. The muscles of the right side of the face and lips twitched. She was taking pus into her stomach with every swallow. Urinalysis showed specific gravity 1029, hyaline and granular casts, a few pus cells, urea 2.6 per cent., indican, degree of acidity fifty. I removed the loose teeth and turned her over to her physician, who found the entire bowel filled with fecal matter.

In a similar case, a fifty-five-year-old woman had an impacted bowel, in the center of which was an opening about the size of a silver quarter, through which soft fecal matter passed after taking medicine which had become necessary each day. This accumulation had been present for more than a year. Such cases are frequently encountered.

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Constipation and want of proper attention to the bowels requires more extended treatment. The patient must have a particular time for evacuation of the bowels each day. The best time is after breakfast; the hour selected should not be varied from in the least.

Here two methods may be employed. A saline laxative may be used as a substitute for the bile acids, which will excite the secretions of the mucous membrane throughout the alimentary canal and also stimulate normal peristalsis. Von Noorden claims he can cure constipation by dietetic measures in from three to six weeks. Boas finds the method successful in the most obstinate cases. The laxative elements of the food in an anti-constipation diet consist of water, salt, sugar, acids, fat, and the indigestible residue of the food, chiefly cellulose. He recommends from half a teaspoonful to one teaspoonful of salt in a glass of cold water before breakfast. Dr. J. H. Salisbury,* who has had good success with this treatment, claims that lemon juice, another laxative element, increases the palatability. Diet is very important in this connection. In some patients, the muscles of the stomach are weakened, in others there is a lack of hydrochloric acid. Examination of the stomach contents is often necessary to determine its condition. If the patient be taking little nourishment, there is most likely a deficient secretion of hydrochloric acid. Examination of the stomach contents is often necessary to determine its condition. If the patient be taking little nourishment, there is most likely a deficient secretion of hydrochloric acid. This would favor constipation. Strychnine is here indicated as a bitter and a tonic which increases the appetite and strengthens the muscles of the stomach. One great source of constipation is lack of water in the system. The feces become dry because the water in the intestinal canal is absorbed. This may be demonstrated by measuring the quantity of urine passed every twenty-four hours. The normal quantity should be three pints or forty ounces. That much water should be drunk each day including tea, coffee, and milk.

Bacteria being present there is always a certain amount of putrefaction, food decomposition occurring all the time. A regular soft movement every day is desirable. This, however, does not always prevent putrefaction, especially where foods containing germs are carried into the intestines or special foods which are acted upon by the bacteria are already in the bowels. Distinction should be made between normal fermentative decomposition of albumen brought about by the action of gastro-intestinal secretion and putrefactive decomposition of the same albumen due to putrefactive micro-organisms which gain access into the bowels and exer-

* Habitual Constipation. The Alkaloidal Clinic, August, 1905.

cise pathogenic action. Absorption of these products into the blood sets up the symptoms already enumerated. The necessity of counteracting this putrefactive decomposition of albumen in the small intestines brings the practitioner face to face with hepatic insufficiency.

**Hepatic
Insufficiency.**

By hepatic insufficiency is meant when the liver shows inability to perform its function. The causes of hepatic insufficiency have been conveniently classified by Abbott* under three heads, viz.: (1) mechanical, (2) infectious (parasites), (3) toxic. From my personal experience, I am inclined to add (4) arrested development of the organ. When any one or all of these causes exists, it is not to be wondered that auto-intoxication takes place. The intestinal tract at all times contains bacteria, many of which are toxic. Decomposing albuminoid substances which often become putrefied and poisonous pass, via the portal system, through the liver which is constantly exposed to their toxic influences. The function of the liver is to restrict or prevent putrefaction, which is accomplished in three different ways: (1) By sending bile into the upper portion of the small intestines capable of destroying putrefactive bacteria the entire length of the small intestines, but more particularly the upper portion. (2) It destroys the albumoid products already decomposed, thus preventing them from entering the circulation only in an innocuous form. In this manner they are eliminated chiefly through the kidneys without pain. (3) The liver is an excretory organ in that it sends back into the bowel non-toxic material which was originally toxic when passed into the liver. The liver therefore is a secretory as well as an excretory organ. This paper deals with the liver as a secretory organ alone and with what takes place when the secretion is arrested or changed in character.

The bile acts in four different ways: First, it stimulates peristalsis of the small intestines; second, it regulates the degree of fermentation; third, it assists in emulsification and saponification of fat globules in the intestines, and fourth, it destroys putrefactive bacteria.

The poisons generated in the intestinal tract are gathered into the portal system and carried to the liver cells by the capillaries. For a time these cells can dispose of the toxins by destroying them. If the stream continues to flow faster than the capacity of the liver can exercise its dis-intoxicating function, it becomes impaired. The blood poisons then enter the circulation.

Deficiency of bile, whether due to tired out liver cells or arrested liver development, will cause retention of waste products, constipation, and pu-

* Alkaloidal Clinic, December, 1904, page 1231.

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trefaction with resultant autointoxication. Waste products of general metabolism must also be considered with those poisons from the intestines which bring about toxic effects.

When the liver cells, exhausted, can no longer perform their functions normally, the poisons brought to the liver through a network of lymph and blood vessels from the general circulation can no longer be converted into innocuous end products, urea, uric acid, creatin, etc., but are carried into the general circulation unchanged. These toxins, together with those from the intestines, produce self poisoning if not quickly eliminated through the kidneys.

Putrefactive changes in the intestines are indicated by flatulency of the stomach and bowels; acid stools with considerable odor and distended stomach and bowels. These in turn indicate hepatic insufficiency or liver inactivity, causing all of the symptoms enumerated.

Indicanuria is a positive proof. Indican is derived from indol, a product of albumen putrefaction in the small intestines. Indican is a colorless, syrupy, bitterish derivative also obtained from indigo plants. Other poisons in the urine, sweat, and saliva demonstrate further toxic substances from the intestines circulating in the blood. The toxic products circulating in the blood affect the heart and cause a high blood pressure. High blood pressure together with toxic products circulating in the blood set up inflammation in the alveolar process and gingival border; the alveolar process first, because in the gum tissue under high blood pressure, the tissues being soft, arteries can and do expand and the tissue recovers as soon as the cause is removed; and because the arteries running tortuously through the bone can not expand, blood pressure and toxic products cause inflammation and absorption of bone tissue without restoration. Hence the term "interstitial gingivitis" (deep-seated inflammation in the alveolar process). Cardiac-vascular, nervous, hepatic, and renal diseases as related to interstitial gingivitis are therefore due to the same cause. In relieving or removing the cause of interstitial gingivitis, the other symptoms and diseases are relieved and *vice versa*.

In interstitial gingivitis due to autointoxication the best results can be obtained by cleansing the body of decomposing and foreign substances and placing the eliminating organs in a healthy condition. The mouth should be cleaned up, the bowels down, the internal organs inside, the skin outside, and kept clean.

In prescribing for autointoxication note the symptoms and then apply the indicated remedy. There are marked differences in susceptibility to

Effects of Toxines in the System.

Treatment Varies with Individual Symptoms.

drug action. No two are alike. The child does not require the dose of an adult. No two have the same symptoms. The heart, temperature, and to all appearance the bowels are normal, yet groups of symptoms show that waste and repair are not in harmony. Dosage therefore varies considerably. A lean, active man who eats little and is abstemious requires different dosage from a fat man of full habits leading a sedentary life with unhygienic habits. To prevent overdosing or "dose enough" as Dr. Abbott calls it, the stomatologist should fix his mind upon the results which he wishes to obtain and give a minimum dose at intervals until these are obtained.

Autointoxication is due to putrefactive changes in the intestines arising from a want of sufficient bile to cause peristalsis and destroy the bacteria. Urinalysis demonstrates exactly what is taking place and what is required in the way of treatment. In connection with a retention of toxins such symptoms are observed as loss of appetite, headache, loss of memory, vertigo, insomnia, tinnitus aurium, general nervousness, biliousness, irritability, weakness, cold extremities, melancholia, impotence, malodorous breath, leg cramps, twitching of muscles, muddy complexion, and many other symptoms.

Treatment must be discussed in the manner already mentioned. First as to the senile stage or tired out eliminating organs. The first indication is to remove the cause and cleanse the bowels. This may be accomplished by flushing the bowels with soap and water once or twice per week, restoring the tonicity of the bowel muscles by massage. A saline laxative upon rising in the morning, once or twice per week, is likewise beneficial. In minor ailments such as above mentioned nothing is better. Cleansing the alimentary canal of all fermented and putrefactive material keeps the mucous membrane clean and the blood pure, which is always the great source of health.

Since putrefactive changes in the intestines and non-destruction of waste products are largely due to hepatic insufficiency, the liver now requires attention. **Drug Remedies.** A remedy that will stimulate the liver and cause a flow of bile may be selected from a half dozen or more preparations. A few will be named in the order of their excellence. The dentist should try all these drugs and methods upon himself to note the results. Calomel may be given by itself or in combination with podophyllin, soda, ipecac, etc. Given alone it should be prescribed in 1-12 to 1-6 grain every hour until one grain is taken. This is to be followed with a saline laxative. Podophyllin (mayapple, mandrake) has good results, but is slow in acting though a direct and positive hepatic stimulant. It acts upon the glandular system of the alimentary canal. In small repeated doses it produces pyalism. As

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an hepatic stimulant, it requires four to eight hours for action which may last from one to two days. This drug should be taken in small doses, to prevent griping. 1-12 to 1-6 grain hourly, until 1-2 grain is taken. A little sodium chloride will aid its action and will not leave constipation in its wake. Podophyllin should never be given in large doses. Calomel and podophyllin may be combined with excellent results. Dr. Abbott* recommends the following:

Calomel.....	$\frac{1}{8}$	gr.
Podophyllin	$\frac{1}{8}$	gr.
Rhein.....	$\frac{1}{8}$	gr.
Capsicum.....	$\frac{1}{32}$	gr.

Together, hourly, from six to ten P. M. A saline laxative is used next morning before breakfast. I have used the following prescription with good results:

Aloin.....	$\frac{1}{4}$	gr.
Strychnine Sulphate.....	$\frac{1}{8}$	gr.
Extract Belladonna	$\frac{1}{8}$	gr.
Py. Ipecac.....	$\frac{1}{16}$	gr.

Taken at bedtime. In prescribing either of these, a good saline cathartic should be taken the next morning upon rising to flush the intestinal tract and remove the accumulation that has caused the decomposition. Flushing the bowels with a saline laxative at the proper time to cleanse out the intestinal tract is imperatively indicated. If this be not accomplished when digestion and absorption is re-established excretory material will again be taken up by the portal system and the condition desired will not be obtained.

If the stools are still unhealthy and putrefaction is not removed, administer every two to four hours, two to five grains of the compound lime, soda, and zinc-carbonate. This should be given until the stools become normal in color and odor.

To stimulate the liver, some of the bile acids may now be given. A mixed alkaline salt of the bile acids in doses of 1-12 to 1-4 grain, four or five times a day, is indicated. I have used a preparation called Bilein with good results. Bilein acts in two ways, it mitigates the morbid condition due to a lack of bile secretion and stimulates the organ to resume its function.

The urine must now be considered. The patient

Indications from Urinalysis. (adult) must void three pints or forty ounces each day to be healthy. If the quantity be less, elimination treatment is required. The normal specific gravity is from 1015 to 1025. The specific gravity is readily obtained by the ordinary

* Alkaloidal Clinic, July, 1905, page 662.

"urinometer." As a rule the specific gravity is high when little urine is voided and low when the flow is abundant. The specific gravity is an index to the quantity of urinary solids. The method of obtaining the quantity of solids has been considered in another paper. The normal quantity for a healthy adult male is 1.200 grains of urinary solids daily. If therefore the quantity of urine voided in twenty-four hours is less than forty ounces and if the specific gravity is high, eight to ten glasses of water, including milk, tea and coffee, should be taken each day.

Urine acidity may be determined by litmus paper. The blue immersed in urine will turn pink, if the urine be acid. If the pink paper be used and it turns blue, the urine is alkaline. The urine should normally be acid. This is but partially satisfactory, since degree of acidity alone is accurate, thirty to forty degrees being normal. When the urine is abnormally acid, a three-grain lithia, sodium bicarb., or sodium chloride tablet in a glass of water four times a day is indicated. This treatment will remove the solids, including the urates, and free the capillary circulation of its obstruction.

If the patient be over forty years of age and absorption of the alveolar process has been severe, it is advisable at first to have a complete urinalysis to anticipate more severe lesions, such as diabetes, Bright's disease, casts, etc. If these conditions exist the patient must return to his family physician for treatment; if they do not exist the simpler methods as mentioned in this paper may be adopted by the dentist. The treatment which I have devised will relieve the distension and pressure of the blood vessels in the alveolar process as well as in other parts of the body. This treatment is based upon the results of years of original research on etiology.

After the preliminary treatment, the patient should be given a complete change. If well to do, send him abroad; if he lives in the interior, send him to the sea shore; if at the sea shore, to the interior or mountains; if in the south, north, and *vice versa*. Usually these people can not stand cold weather, a warm or hot climate is beneficial. Hot springs and baths are always indicated. If they can not afford to travel, let them take Turkish baths and drink hot water. Massage is also indicated. Usually these people are high livers. Restriction and change of food is necessary. Patients should be placed upon coarse, simple food and reduce the amount. This will cause peristalsis and the bile acids can take care of the waste products. It may be necessary to change from a starchy to a nitrogenous diet and *vice versa*. Each patient must be treated according to symptoms.

The patient must return to the stomatologist in some cases as often as two weeks to six months to have the local irritants removed and be advised. If the teeth can be preserved "until death do us part" we shall have

received our reward. There are many details in relation to the treatment but time will not permit further discussion.

I can not close this paper without condemning certain manufacturers, who for financial reasons force upon the dental profession effervescing and other preparations to neutralize uric and other acids, entirely ignoring the cause, uric acid not being a cause but only an expression.

President's Address.

By DR. WM. T. CHAMBERS, Denver, Colo.

Read before the Colorado State Dental Association, Denver, Colo., June, 1906.

In opening the regular session of the Twentieth Annual Meeting of this Society, it is a pleasure and a privilege to extend to you all a hearty welcome. Permit me first of all to thank you most sincerely for the honor you have bestowed upon me, by electing me your presiding officer. The responsibilities of the office are felt most keenly, and I hope to justify as well as I can the confidence you have imposed, and trust you will be as considerate and charitable as you can in my efforts to fulfill the duties.

**Novel Method
of Choosing
Meeting Place.**

The place selected by the Society at its meeting last year, was Fort Collins. The Executive Committee had so many requests to change places of meetings, that a wise move was decided upon, that of mailing to each member a blank form requesting an expression as to his choice of place for holding the meeting. The good of the majority and the interest of the out-of-town members has prompted the Executive Committee in getting the expression which results in the selecting of Denver as the place of meeting. In doing so, we are not unmindful of the kind invitation extended by the Mayor and the good people of Ft. Collins, to hold it there. In justice to them, a letter which is quite explicit has been mailed to the Mayor and the reasons for changing our meeting to Denver explained, as well as our appreciation expressed. We have been fortunate in having such an excellent Executive Committee, the members of which have done everything to make this meeting a grand success. Those familiar with the immense amount of detail work in arranging a program such as we have each year can appreciate the time, energy and thought expended by the committee. It has been the custom for years for the President to deliver

an address, but as we have a most interesting program, no attempt will be made to consume much of your valuable time.

**The Value of
Association.**

One great criticism which can be justly passed upon our dental profession is a lack of that power which comes from strong association. It is the watchword of the hour, and our profession will never receive from the great public, the respect which is our due until we get together in every detail which pertains to our professional life. Our work tends in the opposite direction, and we must fight that tendency to the utmost. Individual isolation can never work out the best there is for us in this world. It is through association that we receive enlarged ideas and inspiration, and the man who is absolutely sufficient unto himself will never be doing his best work although he may not realize it. Our professional associates usually know more than we give them credit for, and if we are broad enough, we may gain something from every brother we meet. And should we compare our differences, we are likely to find them more imaginary than real. All this tends to strengthen the value of association. Again, by association, all men are quickened mentally to a surprising degree. The environment of our offices does not tend to bring out our best qualities. Let us be honest with ourselves and acknowledge the truth that our work tends to make us somewhat narrow in our views unless we yield ourselves to the quickening influences of association.

I sometimes think we dentists do not realize the benefits which are and can be derived from an association such as we have. It can not be denied that man has never accomplished as much individually as collectively and this is as true in dentistry as in any other walk of life.

Ella Wheeler Wilcox has said, "There is no school that disciplines the mind and broadens thought like contact with mankind." We all know that if we live much to ourselves, we are sure to become narrow minded and realize but little of life's possibilities.

**Better
Business Methods
Recommended.**

Aside from the benefits of association, already mentioned, it would seem that we neglect one of the most important, namely that of establishing among all reputable men a minimum schedule of fees and a definite system of credit. Or in other words, developing a true business or financial basis to accompany the high professional standard which we have attained. By this do not understand that the dentist should be encouraged to think only of the financial. Far from it. As a profession, we injure ourselves by failing to develop the business side of our natures. The dentist is peculiarly situated, in that he is compelled to use material which is valuable. The time for work is limited,

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and the average dental operation requires much more of our working hours than we imagine; if we but stop and compare the surgeon's work in performing operations, the point is brought out. The surgeon performing an operation for appendicitis will have completed his work in three hours, having his patient located in the hospital ward, and a few visits of short duration, as a rule, will suffice. No expensive material is necessary for his work. His first investment in instruments is the greatest. His office equipment is not very costly and he is not buying gold, platinum, and other high-priced material. The same may be said of the general practitioner of medicine. Again, such practitioner can maintain an office at less expense, for it is common for two to share one office, while most dentists find it necessary to be alone. The medical fraternity, in nearly every community, has its minimum schedules. Lawyers are generally able to make them for each occasion. Due allowance is to be made in dentistry, as well as medicine, for worthy and charitable cases. A practitioner would be inhuman indeed, who would refuse to care for patients during misfortune, who had patronized him in their prosperity. But the people who take advantage of our loose methods of establishing certain fees for work and our credit system, are innumerable and familiar to us all. The condition creates so much unpleasantness between patient and dentist and, not infrequently, the most bitter feeling between practitioners, that co-operation in this one particular would bring about a most congenial change. Aside from doing a certain share of charitable work, every dentist must make or, at least, should make provision for the proverbial rainy day. This should be done during a certain number of years, when he is in health, full of vigor and enthusiasm, and eyesight good. This being the case, in a time like the present a busy dentist should be able to make more than a living, of course it being understood that he is not careless and extravagant. The materials we use naturally make much work commercial, but we can by mutual consent establish the value of plates, crowns and bridges, from the standpoint of material, and then a value on the professional time and skill. All who feel the need of some such arrangement could make a satisfactory schedule. Nothing would prevent a dentist from charging more, but to all who agree to such an arrangement it would be a great satisfaction to know that patients who are abundantly able to pay reasonable prices for work, can not go to other reputable men and get it for less. Again, it instills confidence in patients, and in us as brother practitioners, bringing us closer together; and imaginary troubles and most of the real troubles would be corrected, if we would but consult one another immediately when those troubles arise.

**Advantages
of Co-operation.**

We scarcely realize the importance of co-operation until we consider what it is doing in the business world. The manufacturer who buys raw material such as wool, cotton, or silk, must pay for it upon delivery. The manufacturer does not make up his stock of material until the wholesaler places his order for goods and gives positive assurance of paying for them when delivered. The small jobber in turn must satisfy the wholesaler as to his ability to pay. The retailer is compelled to show the jobber that he is worthy of credit, and in this State the consumer is now listed, if he gets credit, according to the way he pays his bills. Unworthy people are deprived of the credit system. One can not have a fire without a cause, as the Insurance Companies co-operate as well as the wholesale houses, the banks, the coal companies, and lumber yards; all retail business has in turn been compelled to conduct business on the same plan. Every dentist in order to maintain his credit and standing must pay his debts and, as no free institutions have as yet been heavily endowed for the incapacitated dentist, a little attention to the financial side of professional work is certainly worthy of serious thought. The present arrangement in commercial life does not work a hardship on good honest people; it simply prevents the impostor from abusing the credit system. If this system is recognized in the commercial world to-day as being not only important, but absolutely necessary, can we as dentists afford to ignore it? Every creditor is paid before the physician or dentist. The dentist who has practiced fifteen or twenty years and is compelled to take up other work, finds it difficult to master the details of another avocation and make a success of it.

A letter came into my hands recently from a good practitioner stating that he was compelled, after twenty-eight years of active practice, to retire on account of cataract of both eyes. When a dentist is disabled after a certain age, he is handicapped greatly, as his training is in one direction only. You are all familiar with the many who have worked hard, doing conscientious work, and in old age had nothing, simply on account of not developing the business side of their natures. Many will say you can not change conditions, as the dentists will not cling together. It is simply a question of whether we wish to change or are content to permit the present system to exist. The wish is always father to the thought; consequently if we as a profession desire to change conditions, we can do so. All great thoughts are born of great wishes. Desires are creative, and reason is an instrument to accomplish desires. According to statistics the average age at death of the dentist is 45, the lowest with one exception, the teacher, in any vocation in adult life. The clergyman is highest, 68; legal profession next, 64. Farmers and gardeners die about

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this same age, 60, and physicians about 58. It seems perfectly natural that the lives of people should be shortened who work indoors continually as we do, in cramped positions and too frequently doing excessive work. Every busy practitioner realizes the severe physical and mental tension and the hard labor is not conducive to long life. If these statistics quoted are accurate the average dentist compared with other professional men has a short career for effective work.

Every progressive dentist is continually striving to improve his work, devoting his energy and thoughts to the welfare of his patients.

**Dental Credit
Association
Proposed.**

For this State, as a partial remedy or a start in the right direction, the writer would suggest that a Dental Credit Association be formed; all members of the Colorado State Dental Association being eligible as members. The association should have its officers of president, vice-president, secretary and treasurer. Also an executive committee of three members, all elected by ballot. The object of such an association is not to have a report on record in the office of the secretary as to the financial standing of every patient. That can easily be secured through the Retail Credit Men's Association if necessary by many of us who are already members, which will enable any practitioner to decide whether the prospective patient is worthy of credit. All members of the D. C. A., by reporting bad accounts to the secretary and all particulars, will enable him to make and file a complete record of a member's relations with patients. Before this record becomes the property of all members of the association, however, it will be the duty of the executive committee of the association to hear the details of the relations between dentist and patient. The executive committee can then decide whether the patient is deserving of credit. By such an arrangement no injustice can be done either patient or dentist, as the decision is not dependent upon one individual. The secretary's records for use of members then will be final judgment of each case reported upon by the executive committee and no information can be secured from the secretary by any members of the association until the said executive committee shall so decide. The same committee can also submit to the association a minimum schedule of fees which can be acted upon at any called meeting. As no little responsibility would go with the duties of secretary, and the executive committee, the membership fee in the association should be sufficient to enable us to compensate the officers and executive committee. It is confidently believed if such an association could be properly maintained, and conducted on strictly business principles, that our relations with patients and with one another would not only be more pleasant, but greatly improved and more profitable.

The Value of Early Diagnosis.

By WILLIAM A. RAYMOND, D.D.S., Denver, Colorado.

Read before the Colorado State Dental Association, Denver, Colo., June, 1906.

In selecting this subject to present to you it was not with the idea of bringing forth any particularly new points, but of impressing some old ones more firmly.

We are all more or less prone to make a snap judgment, and not give a careful study to many cases before making the diagnosis. Occasionally such diagnosis made in a hurry proves correct, but more often it will be a failure. Most of us will agree that dentists as a rule pay too little attention to the pathological changes occurring about and within the oral cavity, their time being devoted principally to the filling and treating of teeth. Coming in contact as we do with the mouth-cavity so much more frequently than the medical practitioner, we should be able to note any abnormal condition that may be present and to advise our patients in regard thereto. When a patient comes to consult us, our examination should be of the entire oral cavity and not of the teeth alone.

The mucous patches of syphilis or a small tumor should not escape our notice, any more than a cavity in a central incisor. The overlooking of the syphilitic conditions is not only a menace to ourselves but to our patients. A very slight abrasion on one of our fingers may become the seat of infection, and on account of the virulence of this disease be carried unknowingly to other patients.

The dentist who by his knowledge of the normal condition of the oral cavity is able to make a diagnosis of a tumor, which may be malignant, will in many cases prolong life and also add to his reputation.

The impacted third molar is probably the most common abnormality with which the dentist comes in contact. The earlier a diagnosis is made and the offending member removed the better, as we all know the trouble they often cause.

Empyema of the antrum is another disease which sometimes manifests itself apparently as trouble with some of the teeth whose roots are in close proximity to it. In such conditions a careful study of the case and its history is necessary to make the diagnosis. The diagnosis of tri-facial neuralgia which sometimes has its beginning in the dental branches of the fifth nerve also requires the greatest care. To illustrate some of these points I will mention a few cases.

A short time ago I had the opportunity of seeing
Case from Practice. a tumor of the lip in one of my patients. At this time the only point in doubt was as to malignancy.

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As it was growing larger under X-ray treatment I advised him to have it removed before infiltration extended farther. This he did and the pathological examination showed it to be an epithelioma. We all know that it is the opinion of the best authorities that cancer extends by the lymphatics and there is no questioning the fact that its early removal is the only hope of saving the patient's life.

Case 2. Over a year ago a young man was referred to me who had an abscess opening below the angle of the mandible. Several months before it made its first appearance and the surgeon whom he consulted opened and treated it for a short time, when it apparently healed. A month later it re-opened when he again consulted the surgeon and the same treatment brought the same result. In another month it re-opened for the third time and, the surgeon being out of the city, he consulted another who could find no apparent cause for it until he made an examination of the teeth; finding a carious second molar he referred him to me. Examination proved the caries not to have extended far enough to cause the trouble, but revealed an impacted third molar. An X-ray photograph proved the correctness of the diagnosis. With removal of the impacted tooth and treatment, the abscess readily healed. A careful study of the case in the very beginning would have saved several of the sieges he passed through and at the same time not have shaken his confidence in the man whom he first consulted.

Case 3. A rather peculiar case was that of a young woman who was referred to me complaining of the second superior molars. Upon examination they were found to be perfectly sound, but it was readily seen that the third molars had been extracted. Upon close questioning she informed me that these teeth had been extracted at different times and in each instance there had been a flow of pus from the socket lasting about a week. This had been more than a year previous and in the meantime she had continued to suffer with an almost continuous headache until she was on the verge of being a nervous wreck. She had consulted a number of men both in Colorado and the East but in each instance they gave the same answer—neuralgia. When I diagnosed diseased antra she asked to have them opened without further delay. When this was done there was a profuse flow of pus. With treatment this readily cleared up and the openings healed. There has been no further trouble although this was more than a year ago, and she has been like a new woman since. I can not help but feel that had the dentist who removed the last third molar been in the habit of getting the histories of his cases, he could have made the proper diagnosis and saved this patient at least a year of suffering.

Case 4. A miner had suffered for several years with tri-facial neuralgia. When first attacked the pain centered in the right lower molars, and he consulted a dentist who removed them one at a time, although perfectly sound, at intervals covering a period of several months. As the pain continued the bicuspid and finally the cuspid was extracted. At this time he began to use cocain to obtain some relief. A year later he consulted a physician who asked me to make a thorough examination of the mandible bone for a possible piece of root; there was nothing of this sort to be found. When I first saw him he had unmistakable signs of tic-doloureux and told me this had been present from the very beginning. As he would not consent to an operation upon the Gasserian ganglion, the inferior dental nerve was removed. He was informed at this time that if relief did not follow this operation, the larger one was the only resource left to obtain permanent relief. He received partial relief for several months and during the summer there was a total cessation of pain, but in the fall it again commenced and rapidly grew worse so that by winter he was in even a more pitiable condition than before the operation. He returned at this time ready to undergo the operation upon the ganglion, and said he did not care if death ensued upon the table, if he could not get relief from the operation, as anything was preferable to his condition. At this operation after exposing the ganglion the nerves were stretched and severed at least an inch below and at the ganglion and a piece of sterilized rubber placed over the severed ends to prevent regrowth. This operation occurred more than eighteen months ago and since his recovery he has not suffered the slightest pain, nor is that side of his face paralyzed as is the case when the ganglion is removed. In regard to this case I can see no good reason why he should have suffered for such a length of time and lost a number of good teeth when it was possible to make a diagnosis several years earlier. In concluding I wish again to emphasize the fact that we should study our cases thoroughly and make our examinations to include the whole oral cavity and not limit them to the teeth alone.

Discussion.

Disease is simply a deviation from health, and **Dr. F. H. Sutherland.** the only rational foundation upon which steps may be taken to correct the deviation, and restore the patient to health, must be based upon an accurate knowledge of what the deviation is; where located and its extent. Is it pathological, psychological, or simply functional? If it is an actual pathological lesion what

is the organ that is attacked, and what is the true nature of the trouble and probable sequence, or disturbance in the general animal economy which it is liable to occasion? If, for example, the trouble is psychological it most assuredly proceeds from some pathological condition of the brain; the true nature of that lesion must be ascertained if possible. If the deviation is simply functional, what is the organ implicated, and what are the real causes that have led to the disturbance?

While this is a short, and I admit a comparatively crude, outline of the great fundamental principles which must govern every practitioner in his management and treatment of disease, without it he can never expect his labors to be crowned with even a fair amount of success. How many millions of the human family have been sacrificed in the past, and are likely to be in the future, on account of the failure of the general practitioner to make these principles the preliminary foundation of all his attempts in the treatment of disease; and while we readily admit that the origin and cause of many of the diseases that afflict the human family lie far beyond the present knowledge of even the most distinguished diagnosticians, we are still of the opinion that the average practitioner has failed to give to the subject of diagnosis the serious attention which it demands.

Adaptation of the Logan Crown.

BY DR. E. S. McWHORTER, Denver, Colo.

Read before the Colorado State Dental Association, Denver, Colo., June, 1906.

Probably no other form of crown is so universally popular for conspicuous places in the mouth, as is the Logan.

The advent of the electric furnace and high fusing porcelain makes it possible, I believe, to greatly improve the fit of the joint and add any little individuality to the tooth one would desire.

It has been my observation, that the Logan in its *general adaptation* is weak in three points: the pin, the joint and the occlusion; all of which can be greatly improved and strengthened.

The upper incisors and cuspids, I prepare alike,—grinding the end of the root in two flat surfaces, following the gum line, a little below.

In my judgment this is the best form for the end of the root as a base or seat for the crown, for two reasons, resistance to twisting around by lateral leverage, and resistance from shoving outward by having a more direct line to the base against the occlusion.

The root ground off flat, or in the form of a cone, does not give resistance at all to lateral pressure; throwing the strain on the pin, the weakest part of the crown.

The canal is shaped in conformity to the pin, making a snug fit; and avoiding any roundness.

Selecting the crown, I grind it as nearly as possible to fit my prepared root, being sure it rests at the base of the pin, and one of the flat surfaces. Place paraffin wax on base of crown, warm slightly, press into place, and trim even with root while in place. Next take platinum foil, a strip long enough, when laid across the end of the root, so that it may be held with thumb and first finger, on lingual and palatal surface of gum; drive the pin through it and press into place, hard enough for impression; remove it, trim foil off, leaving small margin in excess; return to root, all parts in place, and burnish the excess rim of foil around the root; giving an impression cap of end of root, and distinct outlines.

Remove all parts together; hold the cap against the tooth with pliers and wash out the wax, putting in its place Jenkins prosthetic porcelain, and bake.

We have a joint that is practically perfect. It is surprising how natural and healthy the gum will become. That alone is worth all the trouble.

**Improving
Occlusion.**

The next step is the adjustment of the bite. The occlusion should be made as perfect as possible. Have the lower teeth strike, and strike firmly on a well-contoured surface.

The cusps that lock the bite when in proper occlusion, may be made on the artificial crown by adding a little porcelain here and there as required, and baking.

**First
Bicuspid.**

In preparing for the first bicuspid, we have a bifurcated root to consider. This is a weak root for the Logan, and needs our best efforts to preserve every point favorable to the strength of that root. Grind the root as described above. Parallel the canals and pulp chamber. Solder an extra pin to the crown post with pure gold in such manner as can be adapted best to the pulp chamber and paralleled canals.

I proceed in the same manner as described for impression of root and baking porcelain in.

Much detail can be eliminated and possibly as good fit obtained by burnishing pure gold plate over end of root; push the pin of the crown into position, remove, trim and reburnish, and pack porcelain body into place.



Porcelain Inlays in General Practice.

By C. EDSON ABBOTT, D.D.S., Franklin, Mass.

Read before New Hampshire State Dental Society.

Permit me to express my profound appreciation of the honor of addressing you on this highly important and timely subject. Believing that at present the porcelain inlay stands at the summit of achievement in the continual progress toward an ideal filling for human teeth, we shall endeavor to present the utmost possible in our allotted time, of general principles, comparison of various materials and methods, detailed technique, so essential and so often omitted, and of results to dentist and patient.

The porcelain inlay is already fully established in an up-to-date dental practice. Yet a brief consideration of the functions of a filling and a comparison of our various materials is of interest.

First, my friends, from the patient's standpoint.

**The Patient's
View-point.**

Having experienced most of the benefits of modern dentistry, including the various fillings, root amputation, plate-work, transportation and crown work, by the noted and by students, we speak from experience, as well as considerable inquiry.

The general public demands, and its welfare requires, operations, efficient, durable; less painful, if not painless; rapid, free from heavy force and strain, esthetic and comfortable.

The most brilliant operations, if too disagreeable to the patient, result inevitably in curtailing our field of work and in rendering us far less useful to humanity than would a proper consideration for the feelings of our patients.

The fierce cohesive gold carpenter, who, sparing neither young or old, weak nor timid, anemic nor plethoric, with hammer, chisel, and saw, claiming to improve on nature's material, color and contour, erects monuments destined to last eighty years or more in every case, since all possibility of failure is removed, may think himself divine, but to us, such practice, when universal, is the vestigial appendix of a barbarous age.

On the other hand, careless work, lazy work, ill-judged work or insufficient work lowers our professional repute, to say nothing of its reflex effect on ourselves.

Still again, conscientious careful work, if not directed by continual zeal for improvement and the assimilation of other men's advancement, rarely results in the best service to the patient.

The fatigue of the earnest, ambitious, general practitioner is a great obstacle to the attainment of perfection in the numerous and varying operations daily performed.

Filling Materials. A perfect filling material should restore the missing tooth structure in contour, smooth surface, non-conductivity and color, as permanently as possible, with comfort to patient and dentist. Fillings are valuable as they meet these indications.

We use almost all in varying conditions and give to each a special field of usefulness, but believe that in most cases a filling of a hard material over creamy cement will prove the best tooth preserver, because the cement seals the joint, protects pulp or slightly disorganized dentine, binds tooth and filling together, strengthens frail walls and preserves the color of the tooth. Whether amalgam, gold, gold inlays or porcelain is best as the protective hard material, depends on their physical qualities, the ability of the operator and conditions of teeth.

With the porcelain inlay inserted where indicated what do we find? The tooth restored to harmony in color, contour, non-conductivity and glazed surface, frail walls strengthened and supported by a material which will show the least recurrence of decay around its margins. Its weakness, lack of edge strength, may be largely obviated by judicious application and the use of the blunt margin method, which we shall describe.

This is our ideal. In practice we shall find that a mastery of porcelain inlay is to be obtained only by the scientific method, as elsewhere. With careful analysis the student should make laboratory experiments to settle various points, borrow from other arts and sciences principles already proven, and weigh the various methods presented. The practitioner will probably find necessary, scores of hours of laborious experimentation, the setting of many inlays, the trial of many methods and devices before he acquires sufficient dexterity, certainty and speed to make porcelain inlays a routine procedure.

We now consider outfit, materials and methods. We believe sufficient time has not elapsed to demonstrate definite superiority of porcelains, matrices or methods, such as direct burnish or impression.

We submit the way we follow, after trials of many methods and careful observation of their results.

Method of Making Porcelain Inlays. A large marble shelf to the right and rear of the operating chair holds our furnace, bodies, and all material used solely for porcelain inlay.

A good gasoline furnace, for baking inlays, crowns, and small bridges, though noisy, meets the needs of the dentist in the essentials of sufficient and even heat, economy

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of purchase and operation, freedom from accident, ease of repair and transportation.

We find the Brewster high fusing bodies of good color, stable, easily worked, not too taxing on the furnace. The other materials were shown in our clinic and will be briefly mentioned later. We endeavor to have our practice a deduction from principles.

1. Porcelain is about equal to enamel in edge strength. Hence joint between cavity margins and porcelain should be at right angles, if possible; direct bite on margins should be avoided; porcelain must have thickness for strength; use the blunt margin method in direct biting contact.

The blunt margin method, while successful in my hands, requires much testing, which we solicit for it. Where exposed to bite, slightly round exposed margins of tooth and inlay. This is done either in preparing cavity and packing body or with disks before setting. In distal cavities in cuspids and approximal cavities in bicuspid, slightly over-contour porcelain near occlusal margin rounding it off to the joint. If you do not do this, gentlemen, the force of mastication will break down these frail edges, leaving a rough crevice instead of a smooth rounded joint.

In incisors make the joint square across the tooth, cutting a slight groove into the cutting edge between the enamel plates, with a small finishing fissure bur held parallel to the long axis of the tooth. Round all incisal margins, and we have blunt margins resisting wear, feeling like the tubercle of a tooth and yet showing no break in the continuity of appearance, and the joint somewhat sheltered from direct stress. We do not claim universal applicability for this method, but find it often very useful, particularly in the mouths of hard biters.

2. Every inlay receives stress from all directions, hence inclined planes are insufficient for retention. Experiments by Dr. Head and many others prove that all retention by cement should be by undercuts in tooth and inlay; there should be a deep spur of inlay projecting into a deep cavity in the tooth.

3. In mechanics the greatest stress is borne by a flat base at right angles to the direction of force. In approximal cavities the inlay should have a large, flat, cervical base. All other cavities should likewise present a flat seat at right angles to direction of greatest stress.

4. The carpenter makes the tightest joint by driving his plug into a hole slightly larger at orifice. An inlay with margins at right angles to the curved surfaces of the tooth has this form.

5. In fusing, porcelain tends to contract to a globular mass. Hence the cavity outline must not have a single angle but curves throughout.

Slow, long fusing at medium temperature to a final glaze, and slow cooling gives the toughest, most natural and homogeneous porcelain.

Lack of time prevents the statement of many fundamental principles and their applications.

We will now briefly describe the technique of our operations. Ample access previously obtained, preferably by cotton or gutta percha, is essential. The tooth and neighboring territory is thoroughly cleansed and the mouth sprayed. With the assistant directing a small stream of hot water at 118° F. into the cavity, the operator uses sharp round burs to remove all decay, except where this would endanger the pulp. Cervical cavities are prepared chiefly with square-end fissure burs. Approximal cavities are prepared at gingival seat with fissure and inverted cone burs. A deep cavity, deep grooves, or pins will give retention. Margins are shaped and finished with finishing burs, stones and disks to the utmost smoothness.

Our matrix is prepared by forcing the center of a large piece of 1-1000 platinum foil, annealed, into bottom of cavity with ball of cotton. This removed, the matrix is held in place with a strip of rubber dam and burnished to accurate fit. The final burnishing direct on platinum foil at margins makes it thinnest here, giving the best possible joint. Holding the matrix firmly with fingers over margin, the excess foil is bent free. Then the matrix is easily teased out.

The first bake should be a thin film. The inlay is gradually baked to contour, as determined by the eyes, geometrically projecting the tooth surfaces as shown by the matrix.

We would rather have the inlay slightly below than above the tooth outline, for the tooth will wear. We must remember this in every step of our work, so operating that the tooth may prove serviceable after much wear.

The matrix is peeled off the moistened inlay, tooth and inlay undercut, sprayed and dried and the inlay cemented in position with creamy Harvard Special Inlay Cement to match or to modify the tooth and inlay as judgment dictates. It is held firmly in place with springy steel instrument until cement is hard, or tied in place. Paraffin is flowed over completed operation.

In conclusion, we will state that we have found this work a continual satisfaction. We have our troubles; sometimes an inlay is lacking in color, contour, or fit, or requires recementing, etc.

But all things considered we find our best efforts in porcelain inlay superior to our best in other materials and our average superior in the essentials of efficiency and permanence. The experienced dentist finds less



nerve strain, time, and fatigue required in its general use and the satisfaction in restoring contour, or possibly the raising of a whole bite with its aid, in marked deformities, as well as in routine cases, is unlimited. Patients like it, it increases the usefulness of dentistry to classes and masses. It is a practice builder.

Some Things I Find Helpful.

BY DR. G. A. DILLE, Denver, Colo.

Read before the Colorado State Dental Association, Denver, Colo., June, 1906.

Mr. President, Ladies and Gentlemen:

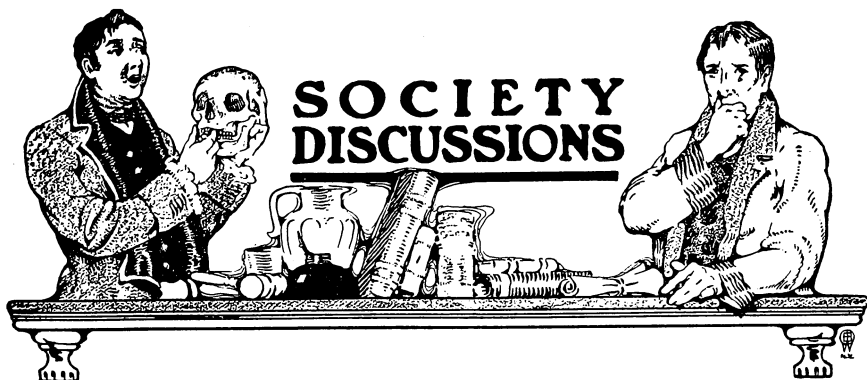
The purpose of this paper is to present some of the economics of time, etc., acquired in the practice of dentistry, covering something more than a third of a century.

In the repair of bridge work with facings, wrap the facings in two thicknesses of wet asbestos paper held in place with binding wire and apply blowpipe flame as soon as you like.

If the metal plate to be vulcanized is coated with liquid silicic acid and invested before it is dry it will come out of the investment as bright as it went in and none of the silicic acid will adhere as it may if allowed to dry before investing.

Laboratory wax may be easily and quickly cleaned and put into convenient form by melting the entire mass in a stew pan and then pouring into a layer cake tin coated with mercury. A large pan is best. The wax may be made as thin or as thick as you like, cut into convenient form and stored away for future use.

Pearline makes an ideal separating material, dissolved and colored with red ink or a bit of indelible pencil. A dash of the powder into the boiling water for removing the wax from an investment acts like magic; or for cleansing the hands first lather them with a good toilet soap and on to that apply some of the powder; work it up thoroughly getting it into all crevices, then apply the brush or sponge with water and the hands are clean before you know it; dry them and apply not more than four or five drops of 2 parts glycerine and 1 part Pond's Extract perfumed and your hands are ready to work for anybody.



New Jersey State Dental Society, Thirty-sixth Annual Meeting.

Discussion of Dr. Talbot's Paper.

In reading over Dr. Talbot's paper I tried to **Dr. M. I. Schamburg.** select that feature of it which would afford the greatest interest in the discussion, and it occurred to me that Dr. Talbot's paper is quite in contrast with the papers we have been listening to in the past few years upon the treatment of the conditions which are known as interstitial gingivitis and pyorrhoea alveolaris. In Dr. Talbot's paper you notice he calls our attention to constitutional treatment entirely and I believe the paper is a timely one, because that feature of the treatment of the diseases of the gum has been sorely neglected. We have been dwelling upon the necessity of removing calcareous deposits from the teeth which tend to press upon the gum, and cause resorption, and there is little doubt but that such treatment is essential in overcoming the acute symptoms of pyorrhoea alveolaris. But does it tend to create any degree of permanency in the cure? How many of us started out originally to treat the cases purely by instrumentation and medication, but have been disappointed because the patient would return a few months later with recurrence of the trouble?

Fortunately we have in our possession men who are ready to make a deeper study of pathological lesions about the mouth, and Dr. Talbot has presented to us a most clear and precise study of the etiology and pathology of a condition which we are meeting daily, and which, as the essayist says, is prevalent in the mouths of almost every one of us. The great difficulty is to decide at what time to start treatment; in other words, when does interstitial gingivitis, with pyorrhoea alveolaris, begin? If

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we look into the mouths of our patients and endeavor to search for caries only, or irregularities of the teeth, we are very likely to ignore the appearance of the gum tissue. But if we look for trouble about the peridental tissues I am quite sure that we shall find it. We notice oftentimes a torpid condition of the gums, something which indicates that the patient's health is not up to par, and the Doctor correctly stated that the stomatologist is in the best position to forewarn the patient of impending constitutional ailments. Time and again have patients come to me who have had a pyorrhoea alveolaris, and I have made up my mind to examine the urine in every such case that comes in, for the reason that I find an excess of uric acid in a large proportion of the cases; and I note that when the uric acid is not excessive I find either sugar or albumin there as an indication of either diabetes or Bright's disease, and these patients have gone along with such trouble without the family physician being at all aware of the fact until the patient returned to the physician and told him that the mouth lesions indicated they had something of a constitutional nature.

The point, then, that is most valuable in Dr. Talbot's paper is that it directs our attention more forcibly to the need of constitutional treatment. He chooses to term the affection an autointoxication, and that covers a multitude of sins; it covers the tubercular toxins that create interstitial gingivitis; it includes the syphilitic and the diabetic; it includes the nephritic which create a torpid condition in the gum, so that it covers it all and outlines a very simple way of dealing with interstitial gingivitis, and I think we should keep in mind that this paper deals more particularly with interstitial gingivitis than it does with pyorrhoea alveolaris, as the essayist explained last evening.

We must remember that the alveolar process is a transitory tissue; it comes and goes with the teeth, and it is very likely to go before the teeth if there are certain irritations produced about it, either as a mechanical act, as you all know, due to faulty occlusion, or the pressure of artificial dentures, or the retention of food in the interdental spaces; an atrophic condition is produced which is at the bottom of the osteomalacia, the absorption of the bones due to the various things which indicate that the osteoblasts are set at work, and I am forcibly impressed with the fact that we are not dealing, in interstitial gingivitis or pyorrhoea alveolaris, with a purely local disease, or even a surface disease.

As a proof of that, I have had some rather interesting results from the use of the X-rays, in connection with pyorrhoea alveolaris. It is not original, by any means, with me; I really got the thread of the idea from Dr. Price, of Cleveland, through an experimental result in a case of pyorrhoea where he had exposed the lower teeth to the X-ray,

**The X-ray in
Pyorrhoea.**

and protected the upper, and, without any scaling whatever, created a cessation of pus discharge from those teeth, while the upper teeth, which had not been exposed to the X-rays, continued to exude pus.

Just what the *modus operandi* is I am not prepared to say, except that we know the X-ray tends to stimulate healthy tissue and to destroy diseased tissue. We also know that it has a decided degree of penetration, for it passes right through tissue. That is indicated by the very beautiful radiographs we are able to produce through the jawbone. And it is reasonable to suppose there is something taking place within the tissue, in the interstitial tissue which can not be reached by instrumentation and topical application, but that the interstitial tissues must be reached either by constitutional treatment or by some stimulation such as the X-ray and massage can give the parts. So often do we find cases of interstitial gingivitis where there is a marked recession of the gums, a marked atrophic condition without any indication of pus discharge or even any deposits upon the teeth, that we are always at a loss to know how to account for this action. I think the lecture last evening will make clear in our minds just how such a condition is brought about, and with the excellent paper that was presented this morning I feel that we, in the future, will know a little bit more how to combat that trouble.

I really do not see why I should be called upon to
Dr. Farrar. discuss the paper; I have not read it, although I heard it. But I was very much interested and impressed.

It showed me how important it is that dentists should know a little something about medicine. In the paper we are told enough to convince us that we ought to be something a little different from mere mechanics. No man can treat that disease properly who has not some knowledge of medicine; sufficient, for instance, to enable him to know how and when to direct his patient to the medical advisor. That seems to me very important, to know where we should leave off; where we can advise our patients to go on. For instance, we can ask our patients for the address of the medical advisor, stating that we will suggest to him looking into certain lines that are within his specialty. By that means we are doing our full duty. It is not the duty of the dentist to meddle with the work of the physician, but it is our duty to be able to tell the patient when his case calls for medical treatment. Then the physicians themselves will look upon the dental profession as something more than merely mechanical.

I think Dr. Talbot's paper, in bringing out the fact that pyorrhoea is largely due to a derangement of the general system, is very important. We can talk intelligently to our patients, and our patients can talk intelligently to their friends, and the physician find out that we do know some-

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thing besides the mere scraping of teeth, and it reflects upon the profession in a very happy way.

This is a department of dentistry about which
Dr. P. B. McCullough, I confess little knowledge. I have been waiting since
Philadelphia. my first reading of pyorrhoea for some one to present evidence of a study of the subject after the scientific method, rather than that so often exploited, which deals solely with signs and the assumption of local origin.

The immense amount of labor reflected in the two essays by Dr. Talbot, the completeness of the data and the order of presentation are so thorough that the logical conclusions seem to me irrefutable.

Why we find pyorrhoea in the mouth as a manifestation of a systemic disease may be explained by the fact that all the conditions in the mouth are favorable to the development of bacteria; light, heat, moisture. So that when by treatment, mechanical and chemical, conditions are so altered as to restore a normal healthy condition of the mouth the pyorrhoea is said to be cured. In a given case, when treated early in life at the first appearance of the disease, mechanical treatment, once a year, will be found sufficient to maintain a uniform pink line. When, by experience, we become more observing, and the patient becomes older, it will be found that treatment once every six months is necessary, then every few weeks, then, in spite of all we do, the teeth are lost, because we have been treating pyorrhoea instead of interstitial gingivitis.

There are only two thoughts that came to my
Dr. William F. Daily, mind while I was sitting here—the difference in
New York. phraseology; one man calls this a paper on pyorrhoea alveolaris, but as I understand the paper read by Dr. Talbot is on interstitial gingivitis. They are two diseases, as distinct as New Jersey and New York. Last night Dr. Talbot showed conclusively on the screen what he meant by interstitial gingivitis, and there is a marked difference between interstitial gingivitis and pyorrhoea alveolaris, as Dr. Talbot specially pointed out, and I think it is a great injustice to tack onto his paper a term he has not used in it—pyorrhoea alveolaris.

Another point is the fact that there is one treatment that was possibly overlooked, or did not appear, that Dr. Talbot had called attention to drugs for the treatment of interstitial gingivitis. We all know that in our so-called civilized condition—I say “so-called” because we do not live natural lives—that we substitute drugs for the natural mode of living. A natural mode of living would be physical exercise and fresh air—in the paper I understand there was greater stress laid upon drugs than upon physical exercise and fresh air. Am I correct?

SOCIETY DISCUSSIONS

Dr. Talbot. In the paper I read last night before giving the lantern lecture I brought that all in. I said it would take six lectures to cover the entire subject.

Dr. Daily. The only point I wanted to emphasize in reference to the drug treatment is the necessity of physical exercise, for I think that to a great extent we rely too much on drugs. Drugs are like a whip to a tired horse. By physical exercise we can stop and cure the disease in the beginning and also cure it in an advanced stage, and therefore I merely wanted to emphasize the necessity of educating our dentists medically, and teaching them the cure of the liver, heart and kidneys, because in those diseases we have so many persons who do not take sufficient physical exercise, but put undue strain on certain organs, whereas, if they took proper exercise the heart would be relieved, or the lungs and kidneys. If we would follow up the proposed treatment by appropriate physical exercise to strengthen the muscular coating of the intestine and the abdominal wall I am sure it would supplement the drug treatment advantageously.

Dr. B. F. Luckey, Paterson. Some of the points I would have touched on have already been referred to, and it leaves me only this to say, that such papers bring us as dentists to the point where more men will be convinced of the necessity of educating our dentists medically, and then giving them the legal status and power to follow up the treatment in the proper way. It is patent to you all that while we accept Dr. Talbot's presentation as absolutely correct, and while we know that instrumentation should not be our sole reliance, as has been so clearly explained, yet it is not our province to apply the remedy as laid down by Dr. Talbot in that we have no right to do so; we trespass then on the ground of the medical practitioner, and I think the old theory is correct that any man who attempts to cure any part of the human body, medically or surgically, should have his authority resting upon a medical diploma. We, as dentists, are fond of claiming that we represent a specialty in medicine—why should we not be more fond of claiming that we represent medicine itself? Why be a specialist with a partial education—and we all know that our dental education is only partial, and sometimes very weak and very poor.

Dr. Fossume, New York. I think you will all agree with me that we have heard a most orderly, clear and scientific explanation of the causes, and also of the treatment and therapeutics, of interstitial gingivitis due to autointoxication. I can not express how heartily and fully I agree with Dr. Talbot in all his statements. I think it is quite clear that we as dentists should treat these conditions medically as well as mechanically, and for many years I

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have always supplemented my local surgical interference with constitutional advice. The importance of carefully and in detail advising the patient what to do and how to do it is so great that we should each of us study advanced theories and facts concerning human cell growth and metabolism. I would like to mention the work by Professor Chittendon of Yale in this connection.

With regard to the change that takes place in the alveolar process when it becomes diseased, it affects only the outside periosteum covering that has the power to produce the osteoblast cells, while in the major portion such a growth does not take place. But nature is always abundant in its provisions and the part can still be rendered useful and strong enough to withstand the force and pressure of the jaw in mastication if the disease in this end organ can be overcome by establishing a new and healthy growth of cell tissue.

We are living in an age when the world is after realities—the truth; we get realities on both sides of life, the good and bad. What we are after is the truth in regard to this matter, and I believe all this talking and reading and investigation is leading up to one definite point, which is a future outlook for our calling. Don't forget this; it may be the last time you will ever hear me, but I want to put this on record. Dr. Talbot, in my estimation, is an inspired genius who presents a new course of teaching to the dental profession. While I give all praise to the men who have taught us before, men whom I admire with the best affections of my heart, some of these grand old men who have lived and died, Dickinson and such men who have left their records here; what they have said is true to-day and never will be gainsaid, and what Dr. Talbot says in these papers, so far as it has to do with the truth, never can be gainsaid. No man gets at the truth but by revelation, and every revelation we get comes, as Atkinson used to say, from the angels.

Dr. Talbot has a thought in his mind that is leading up to certain results and his papers need to be taken collectively.

In conversation with Dr. Talbot yesterday this thought came out, and I fully agree with him; the greatest need in our profession to-day, in teaching, is hygienic teaching and the study of the nervous organization of our human bodies. In those two thoughts lay the whole question. We can not get away from this fact, that we are predisposed to disease. There is not a normal body on the face of God's earth; everything is perverted in some direction, but there are men and women coming into the world more largely endowed than others, and there are circumstances which come into their lives that change the condition of everything, and

SOCIETY DISCUSSIONS

the result is that from prenatal influences and other things we all come into the world with things fastened to us, some good and some bad.

Dr. Meeker. I want to thank Dr. Talbot for coming here and the good angels who inspired him. We can always feel now when we find an unpleasant odor arising from our patients that they merely need to have their eliminating organs attended to. (Laughter.)

Dr. Talbot. There is so much to say upon this subject, and yet I do not want to take your time up unduly.

I was very much pleased with the discussion; such a discussion could not have taken place five or ten years ago, and it shows that the dental profession is rising and advancing.

There is one point, however, I wish to call your attention to in closing and that is this. There are fixed principles in everything we do; there are fixed principles in nature and all my research work is based upon those fixed principles. I showed last night the difference between interstitial gingivitis and pyorrhoea alveolaris. A large percentage of dentists do not recognize interstitial gingivitis, only such cases in which pus is noticeable in the mouth. I showed last night that interstitial gingivitis is a disease and that pyorrhoea alveolaris is the result of a disease and not a disease itself. Now bear in mind, please, this point, when you go home, that interstitial gingivitis is the disease that you must treat. You all know very well you can not have pus infection in any part of the body without an inflammation. That is fixed. Why monkey with pyorrhoea alveolaris? Drop your pyorrhoea alveolaris and treat your disease and you will not have any pyorrhoea; treat your interstitial gingivitis and let your pus alone, let your pockets alone, except to cleanse the teeth locally. Remove all the irritation about them, and treat your inflammation and the pus will take care of itself. The profession commences at the wrong end. They treat the pus condition and when they stop that, do not know anything about the interstitial gingivitis which is still there.

I thank you very much for your attention.





EDITORIAL

A Dental Labor Union Threatened.

A new and startling crisis in dentistry has just been happily averted. That labor unionism could ever find a place in dentistry probably occurred to none of us, until it had almost reached the stage of actuality. The possibility is directly traceable to Metropolitan conditions, which it is to be hoped do not exist outside of New York City.

In what is termed the great "East Side" of New York there is a teeming population made up almost exclusively of foreign born, or at least foreign bred individuals. The ancestry, previous and present environments of these peoples are such that sentiment has little sway with them. Their fight is for the almighty dollar and their daily bread. In the rush for wages many find employment in dental offices—offices which are technically legal and therefore ethical, since a large part of them are not strictly advertising parlors.

These "ethical" dentists hire boys, or young men, primarily to clean the laboratory and office and to run errands. Later they watch the vulcanizer, pack "cases," polish plates, swage crowns, etc., etc., until in time they become "mechanical dentists." Not diploma men, but still they call themselves dentists—mechanical dentists.



**Mechanical Dentists
Poorly Paid.**

These men are universally underpaid, comparing their work with other skilled labor. From seven to twenty-five dollars weekly is the rule, and the average is not above twelve dollars, or about two dollars a day. Many of them really excel in their work, and naturally chafe at their situation. They have accidentally acquired a handicraft which apparently leaves them no claim either to the status of a profession, or to that of an artisan. They are doing delicate and certainly skilled work for half the pay of the carpenter, the house painter, or the bricklayer. And in the Metropolis there are over three hundred men of this class.

Was not this a fertile field for the tilling of a Labor Union walking delegate? Was it strange that these men listened, when told by the labor organizers, that if they formed a Union they could compel the bosses, "the dental bosses," to pay higher wages?

There is a cant phrase that "money talks," and when you talk money and especially more money to men with families, they are apt to listen. Thus the crisis came about. At first the gatherings were small but they grew larger, and finally a meeting of all the mechanical dentists was called, and the hall was crowded with eager men. Men eager for a betterment of their conditions, but uncertain as to how best to accomplish it. Fortunately sober heads were guiding, and in the end sober judgment prevailed. Drs. Ottolengui, Ash, and Meeker were invited to address the men and they spoke in no uncertain language, giving advice which has borne good fruit.

**Society of
Mechanical Dentists
Formed.**

An organization has been completed more in consonance with our regular dental associations. The society will be known as "The New York Prosthetic Dental Society." The membership and officers will be exclusively of non-graduate men who work on salary for other dentists, or else manage laboratories of their own. But in addition there is to be an "advisory board," composed of ethical practitioners, who will help to guide this bark into safe waters. The objects of this new society are thus announced:

"It is our aim to accomplish the following: To educate ourselves by means of technical papers, clinics and demonstrations, to be given both by members and dentists from the profession at large. To start a Journal

ITEMS OF INTEREST

of Prosthetic Dentistry, consisting of extracts and selections from the leading dental journals; also original articles. To establish an employment bureau for the benefit of members. To endeavor to bring about the establishment in a Dental College of a night course for prosthetic dentists. Applicants to be eligible for active membership must be those who have been engaged in prosthetic dentistry for at least two years. They must be at least twenty years of age and of good moral character."

Thus it will be seen that the Labor Union project has been abandoned for the present. This does not at all mean that it has been permanently prevented. The restlessness of this large body of workers is still in existence, and unless the new organization can accomplish the task which it has undertaken, it is not difficult to guess that the other scheme may be tried.

As a Dental Labor Union, in any form, would be a disgrace to our beloved profession, it now becomes the sacred duty of the ethical practitioners of New York City to watch this new society and to give it all proper assistance, that it may succeed. The best men in our midst should promptly respond to calls for clinics, or lectures. It has been pointed out to these mechanical dentists that their only hope for a real betterment of their situation must be first through education, and secondly through an effort on their part to aid the law officers in weeding out the illegal dental assistants now doing operative work in offices of men who pretend to be legally managing their offices.

To accomplish these two ends, it may become a wise course for our colleges to establish night courses of instruction and it certainly will be well for the mechanical dentists to practically become the watch-dogs of their section to report promptly all illegal practices occurring within their district. The reason of this is patent upon a moment's reflection. They are deprived by law of the right to even take impressions, as they can not work directly upon the patient. Often they are given miserable models, to which they fit perfect crowns or bridges which later they must re-make at personal loss, because they did not fit the mouths. With more competent men actually practicing, the work of the mechanical man must be lightened.



I HAVE JUST received a very affecting letter from my Friend, the Optimist.

✦ He begins by informing me that "Christmas is coming." Really, I
 ✦ must confess that I had not credited my Friend with such clairvoyance.
 ✦ Of course I know that it is common custom with him to peer into the
 ✦ future, but his prognosis of facts before they occur has usually been so
 ✦ different from my diagnosis of the same facts after they had happened
 ✦ that I was scarcely prepared to find him correctly prophesying even
 ✦ such a constantly recurring possibility as Christmas. ✦ ✦



STARTING FROM THIS self-evident proposition, to wit, that Christmas

✦ is coming, with remarkable logic, or absence thereof, he deduces that
 ✦ Pessimism and Christmas are not exactly blood relations. Well, per-
 ✦ haps not. Yet I might mention the blood money spent for blood rela-
 ✦ tions around the Christmas period, and suggest that many Pessimistic
 ✦ thoughts originate therefrom. But I will not say it. My Friend insists
 ✦ that I must not be Pessimistic because Christmas is coming. Well,
 ✦ maybe I'll try Optimism for once. Maybe I'll hang up a bigger stock-
 ✦ ing this year and let the furnace fire go out, so that the coal gas shan't
 ✦ scare Santa Claus away from our chimney place. ✦ ✦



THERE IS ONE thing about the big stocking, come to think it over. It

✦ will hold just as much as the little one that I usually find about half
 ✦ full. So I can't lose anything. ✦ ✦



MY OPTIMIST FRIEND says that if I look back over the past year I'll

✦ find that I haven't been such a good guesser myself. He says things

ITEMS OF INTEREST

✦ haven't been half as black as I've painted them. Then he picks out the
✦ politicians as shining examples. He says; "Reconsider what you said
✦ about the politicians. Aren't they much better than you thought they
✦ were, now that you know them better." ✦ ✦

REALLY THAT IS embarrassing, with Christmas coming too. Um! What
✦ shall I say? You see I don't want to say too much. But for once my
✦ Optimist friend hits the nail on the head. He says, "now that you
✦ know them better." Right you are, Sonny! I do know them better.
✦ Better than ever. And, till after Christmas, we will let it go at that.

THEN MY OPTIMIST Friend tells me that I was wrong to "say things"
✦ about the Examining Boards. He insists that Examining Boards are
✦ necessary. So are a lot of other evils. But I shan't say any more
✦ mean things about Examining Boards, because a Friend of mine has
✦ just got a job on one of them, and he promises that if there is any
✦ "dough" about, he'll send me some for pessimistic cooking in my own
✦ little oven. So far, though, he hasn't found enough dough to make a
✦ penny cruller. ✦ ✦

AND THAT REMINDS ME. Somewhere in his letter my Friend gets
✦ poetical. As I can't find any quotation marks, I am not sure whether
✦ it is original or not. Sounds familiar, so maybe my eyesight is bad, or
✦ his pen ran dry, or something. Anyway here is the effusion. ✦ ✦

TWIXT OPTIMIST and Pessimist the difference is droll;

✦ The Optimist sees the cruller; the Pessimist the hole! ✦ ✦

NOW ISN'T THAT just like the man? I suppose he thought I'd shrivel up
✦ with shame when I read that, but somehow I don't shrivel. The Opti-
✦ mist sees the cruller! What if he does? Can he tell at a glance whether
✦ that cruller is fresh or stale? Or whether it is as good as mother used
✦ to make? No, he can't. But he thinks it is all O.K. when often it is old
✦ cake. Now how about your Pessimist? He sees the hole! Well, the
✦ hole is there, isn't it? And cruller holes are growing bigger and bigger
✦ ever since Mother died, aren't they! Very well then! Q.E.D., if you
✦ know what that means. If not look it up. ✦ ✦

NEXT MY FRIEND says that it was "just horrid" of me to hint at there
✦ being any grafters in dentistry. Well, maybe! It is horrid for a police-
✦ man to turn a bull's eye lantern on a burglar just as he thinks he has
✦ worked out the combination of a safe. I certainly see the burglar's side

ITEMS OF INTEREST

* of that. He naturally feels provoked at the interruption. He thinks
* that policeman ought to have been in bed long before. But you see,
* maybe that policeman has insomnia, or walks in his sleep, or something.
* Any way, he's wide awake to what's going on around him; especially
* when burglars and other crooks have pals that peach. And it is just
* the same with Pessimists and Grafters. * *

* * *

THE OPTIMIST says that things are going to be better "after Christmas."

* Truly I think so too. The trouble is to figure out which Christmas we
* are to count from. I am a believer in the Millenium myself, only I'm a
* bit cloudy as to the date of its arrival. * *

* * *

ANOTHER PLACE in his letter my Friend declares that I was all wrong

* about the Faculty Fellows. He says they are mostly right smart folks.
* At least he knows that the Faculty that graduated him was "a bright
* bevy of brilliant men." My! My! and likewise Dear me! His exact
* words are "The men in the teaching Faculty in my Alma Mater were
* rigidly honorable, capable of teaching dentistry as it should be taught.
* They were so strict in their examinations that the majority of our
* graduates have made their mark in the world, and have contributed
* largely to the progress of dentistry." Now isn't that just splendid?
* Isn't that a glorious specimen of self laudatory retroactive Optimism?
* Undoubtedly the Alma Mater habit is growing. But doesn't this make
* you think of the schoolboy that swelled up his chest and cried: "Gee!
* But my mother certainly was smart to have me." * *

* * *

NEXT THE OPTIMIST tells me that ethics is, or are, necessary. Amen

* to that, say I. Only I hate to see the ethical butter spread so thick that
* it is noticeable only in lumps. I think it should be spread out thinner
* so as to cover a wider area—and that is just as good a Christmas
* proposition as I find anywhere in my Friend's letter. * *

* * *

THEN HE SKIPS several of my diatribes without comment. Either he

* considers they are not worthy of notice, or else he did not happen to
* think of any real cute things to say against them. But he alights like a
* bird of prey on my random remarks anent commissions. He says he
* can't believe that any such thing is going on. He specifically alludes to
* the nice little narrative about the man that sold medicine for forty
* dollars per bottle, and says he just won't believe it; at least not unless
* the bottle was a demi-john. He says I must "reform my errant mind
* and expurgate such thoughts." Expurgate is not half bad. What?
* Finally he recommends that I "remove my smoked glasses, and see
* things as they are." * *

ITEMS OF INTEREST

OH! VERY WELL! I presume he wants me to purchase a pair of rose
✦ tinted specs. But when I broached the subject to my optician he in-
✦ formed me that he had already sold out his entire stock to the Opti-
✦ mists. He says those Fellows always buy him out as Christmas
✦ approaches. I suppose that after a year's use the pink paint begins to
✦ peel off a bit, and things look rather naked to their unprotected eyes,
✦ the poor Dears. ✦ ✦

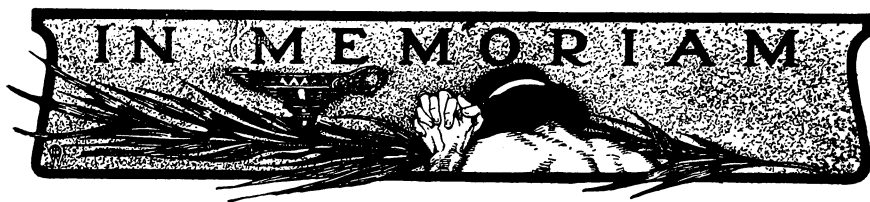
BUT HONEST AND TRUE. As the little girls say, "I cross my heart;
✦ hope to die!" Really I do feel a little Optimistic tingle attacking my
✦ toes, just like when you begin to doze off under ether. Anyway some
✦ things look a little brighter to me. Two men have sworn off from giv-
✦ ing commissions, and another Fellow tells me he won't take any such
✦ hush money any more. Now when I say "hush money" I don't mean
✦ what you mean. I'm not so mean as all that, if I am a Pessimist. I call
✦ it "hush money" because—all hands keep so quiet about it. ✦ ✦

LIKEWISE I LEARN that the man of the forty dollar medicine episode
✦ has reduced his price to thirty-eight dollars, the size of the bottles re-
✦ maining the same. I hope this is an attack of righteousness and not an
✦ attempt to compete with the drug department at Macy's.

I ALSO AM informed that my casual comments on the "innocuous desuetude"
✦ of committees on ethics has born fruit, and the first plucking produced
✦ a peach. It appears that a certain prominent dental society is about to
✦ hold a grand clinic and that many of the elect, as well as others, have
✦ been invited to produce public proof that they know something. Now
✦ it seems that one of the recipients of a clinic invitation accidentally left
✦ his where a Reporter Person chanced to see it. And that Newspaper
✦ Party straightway put the thing in his paper, congratulating his com-
✦ munity, as it were, that they had in their midst, or thereabouts, a
✦ Dentist Fellow smart enough to go to the Big City and tell the Others
✦ how to do things. But it seems that a Zephyr wafted this breezy news-
✦ paper clipping near enough to the Ethics monitors of that dental society
✦ so that they sat up and took notice; and they whispered things to the
✦ Clinic Committee, and the Gent. has been told that they are going to
✦ try to run that clinic without his help. Sad isn't it! ✦ ✦

THUS THE THOUGHT is forced upon me that maybe things will be better
✦ because of Christmas. Maybe the Millenium will arrive on the crest
✦ of a Blizzard about January First. And, of course, if that happens
✦ Folks will no longer need ✦ ✦

The Pessimist.



Frederick Harvey Lee.

At his beautiful home on Williams Street, Auburn, N. Y., Frederick Harvey Lee, in his 53rd year, after three years patient suffering closed his eyes in that sleep that knows no awakening, "Gone but not forgotten." In the death of Dr. Lee the profession loses one of its most valued members, one who was recognized not only for his ability, but as well for his genial disposition and high professional attainments which endeared him to his fellow confrères as well as his clientele, which embraced the culture of his home city. Dr. Lee was the youngest son of the Rev. Day Kellogg Lee and Sophia M. Hershey. He was born in Williamsburg, N. Y., December 12, 1853, and died October 24, 1906, just in the prime of life and in the midst of a most useful professional career. He received his early education in Auburn, N. Y., and graduated from the New York College of Dentistry, February 21, 1876. He first engaged in practice in the city of New York, afterward opening an office in Auburn, where during the past twenty-five years he enjoyed a lucrative practice. He was devoted to his calling, and active in the council of various dental organizations, being a member of the New York State Dental Society, the Seventh District Dental Society, the Rochester City Dental Society, the Central Dental Association of New Jersey, the Dental Protective Association, as well as Company D, Veterans 22d Regiment of New York, Auburn Lodge, No. 431, F. and A. M., Royal Arcanum, Auburn Business Men's Association, Auburn City Club, and a prominent member of the Auburn Historical Society. In many of these organizations he held high official positions all of which he filled with credit and ability. His funeral was held and very largely attended from his late home Saturday afternoon, October 27; interment was in Fort Hill Cemetery, where he was laid at rest amid a bower of flowers. Besides a devoted wife, Florence S. Lee, and a loving son and one brother, the Rev. Charles F. Lee, to mourn his loss, he will be greatly missed by his dental friends who were legion. The honorary bearers were Drs. W. W. Smith and F. M. Rood, of Rochester, F. A. Greene, of Geneva, C. C. Bachman, of Waterloo, and W. A. White, of Phelps.

W. A. W.



SOCIETY ANNOUNCEMENTS

National Society Meetings.

American Society of Orthodontists, New York, December 27, 28, 29, 1906.

Institute of Dental Pedagogics, Chicago, December 27, 28, 29.

National Dental Association, Minneapolis, Minn., July 30, 1907.

Chicago College of Dental Surgery Alumni Association.

The Twenty-fifth Anniversary Reunion, Celebration and Clinic of the Chicago College of Dental Surgery Alumni Association.

On January 16 and 17, 1907, the Alumni Association of the Chicago College of Dental Surgery will celebrate the twenty-fifth anniversary of the establishment of the College by holding a grand reunion and clinic. Arrangements have been made for a number of papers, a very extensive clinic, a theater party, and a banquet. A railroad rate of a fare and a third for the round trip from all points in the United States and Canada on the certificate plan has been arranged for.

A cordial invitation is extended to the general profession to be present, as well as all members of the Alumni Association and all graduates of the College.

R. C. BROPHY,
J. P. BUCKLEY,
Committee on Publicity.



Banquet to Dr. G. U. Black.

The Fraternal Dental Society and the St. Louis Society of Dental Science will unite in giving a banquet in honor of Dr. V. G. Black, at the Jefferson Hotel, St. Louis, the evening of January 15, 1907. The afternoon of the same day Dr. Black will deliver an illustrated lecture on some phase of Operative Dentistry.

The long and untiring efforts and valuable scientific contributions of Dr. Black easily make him the foremost dental scientist the world has ever produced. No dentist, living or dead, so much deserves the thanks and praise of his professional associates. A most cordial invitation is extended to the members of the profession to be present at both lecture and banquet and assist in honoring Dr. Black. Those desiring covers reserved for banquet will remit \$5.00, price per plate, to Dr. Richard Summa, Secretary, Oriol Building, St. Louis, before January 12.

GEO A. BOWMAN, Chairman,
A. H. FULLER,
EDWARD H. ANGLE,
D. O. M. LECRON,
ADAM FLICKINGER,
WM. CONRAD,
BURTON LEE THORPE.

G. U. Black Dental Club of St. Paul.

The members and friends of the G. V. Black Dental Club of St. Paul (Inc.), will hold their annual Midwinter Clinic in February, 1907.

Last year we held the largest, best and most enthusiastic meeting ever held in the Northwest, between 400 and 500 practitioners being in attendance. This year we wish to have an attendance of 1,000.

The program is now being arranged by the Clinic Committee. The Operative Clinic will be on its usual high order. There will be a number of Progressive Clinics on both days of the meeting. Several of the best known men in the dental profession will read essays.

The Table Clinics will be the most interesting and instructive which we are able to obtain. The program and dates on which the meeting will be held will be shortly published.



As this is the only Midwinter Clinic held in this section of the country, I take greatest pleasure in extending a most cordial invitation to the members of the dental profession in the United States and Canada to attend our Clinic.

Special rates on all railroads. For any further information apply to
R. B. WILSON, Secretary,
No. 107 East Sixth Street, St. Paul, Minnesota.

South Dakota State Board of Dental Examiners.

The next examination of the South Dakota State Board of Dental Examiners will be held at Sioux Falls, S. D., January 29, 30, 31, 1907, beginning at 1.30 P. M. All candidates for examination must bring diploma from reputable dental colleges or affidavit of having been engaged in the practice of dentistry for at least three years immediately preceding said examination. Instruments and materials necessary to do all kinds of operative and prosthetic work will be needed at this examination. Vulcanizer and lathes will be furnished by the Board. All applications must positively be in the hands of the Secretary by January 22.

G. W. COLLINS, Secretary,
Vermillion, S. D.

Pennsylvania State Board of Dental Examiners.

The Board of Dental Examiners of Pennsylvania will conduct examinations at Harrisburg, December 11, 14, 1906.

For papers and particulars address Dr. N. C. Schaffer, Secretary of Dental Council, Harrisburg, Pa.

Iowa State Board of Dental Examiners.

The meeting of the Iowa State Board of Dental Examiners has been postponed from December 4 to a later date.

Le Mars, Iowa.

E. D. BROWER, Secretary.



National Association of Dental Examiners.

At the last meeting of the National Association of Dental Examiners, the following officers and committees were elected for the ensuing year:

President—George E. Mitchell, D.D.S., Haverhill, Mass.

Secretary and Treasurer—Charles A. Meeker, D.D.S., 29 Fulton St., Newark, N. J.

Vice-Presidents—From the West: F. O. Hetrick, D.D.S., Ottawa, Kansas. From the South: F. A. Shotwell, D.D.S., Rogersville, Tenn. From the East: H. J. McFadden, D.D.S., Philadelphia, Pa.

Committee on Colleges—J. G. Reid, D.D.S., Chairman, 1204 Trude Bldg., Chicago, Ill.; J. J. Wright, D.D.S., Milwaukee, Wis.; J. F. Dowsley, D.D.S., Boston, Mass.

Committee on Joint Conference of the N. A. D. E. and N. A. D. F.—F. O. Hetrick, D.D.S., Ottawa, Kansas, Chairman, N. A. D. Examiners; Charles A. Meeker, D.D.S., Newark, N. J.; J. A. Hall, D.D.S., Collinsville, Alabama.

M. W. Foster, D.D.S., Baltimore, Chairman, N. A. D. Faculties; M. C. Marshall, D.D.S., St. Louis, Mo.; H. E. Friesell, D.D.S., Pittsburg, Pa.

Credential and Membership Committee—W. G. Mason, D.D.S., Tampa, Fla., Chairman; W. G. Rambo, D.D.S., Marietta, Ga.; H. W. Campbell, D.D.S., Suffolk, Va.

State Advisory Committee—C. R. Shacklette, D.D.S., Kentucky, Chairman; Brooks Rutledge, D.D.S., Florence, S. C.; T. P. Whitby, D.D.S., Selma, Ala.; H. S. Sutphen, D.D.S., Newark, N. J.; C. H. Oakman, D.D.S., Detroit, Mich.

Committee on Promoting Relations with Foreign Examiners—T. J. Barrett, D.D.S., Chairman, Worcester, Mass.; J. K. Douglas, D.D.S., Sandusky, Ohio; R. H. Walker, D.D.S., Norfolk, Va.

Committee on Resolutions—H. B. Purl, D.D.S., Kirksville, Missouri, Chairman; H. G. Brown, D.D.S., Columbus, Ohio; R. H. Walker, D.D.S., Norfolk, Va.

Committee on Tabulation of Examiners' Reports of Examinations—A. Irwin, D.D.S., Camden, N. J., Chairman; F. A. Shotwell, D.D.S., Rogersville, Tenn.; C. F. Ladd, D.D.S., Lincoln, Nebraska.

Committee on Publication—J. E. Chace, D.D.S., Ocala, Fla., Chairman; J. K. Douglas, D.D.S., Sandusky, Ohio; E. D. Brower, D.D.S., Le Mars, Iowa.

Committee for Promoting a System of Credits and Uniformity of Examinations—T. E. Turner, D.D.S., St. Louis, Mo., Chairman; F. R. Henshaw, D.D.S., Middletown, Ind.; J. J. Wright, D.D.S., Madison, Wis.



New Jersey State Board of Registration and Examination in Dentistry.

The New Jersey State Board of Registration and Examination in Dentistry will hold their semi-annual meeting to examine candidates in the State House, Trenton, N. J., beginning Monday, December 10, and continuing through the 11th, 12th and 13th. Sessions begin promptly at 9 a. m.

Practical and theoretical work completed at this session.

For information apply to the secretary, Charles A. Meeker, D.D.S., 29 Fulton Street, Newark, N. J.

All applications must be in the hands of the secretary ten days prior to the meeting.

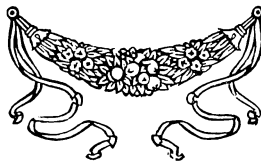
CHARLES A. MEEKER, D.D.S.,
Secretary.

Indiana State Board of Dental Examiners.

The next regular meeting of the Indiana State Board of Dental Examiners will be held in Rooms 11 and 12, State House, Indianapolis, January 8 to 11, 1907. All applicants for registration will be examined at this time. For further information, blanks, etc., apply to the secretary,

F. R. HENSHAW, D.D.S.

Middletown, Indiana.





POSTSCRIPT.

Relief Fund for the California Dentists

An Appeal.

While the whole nation stands with hands outstretched love-laden towards stricken California, the dreadful silence of our professional brethren in that section bears on the winds of fraternal interest and affection an appeal to the North, to the East and to the South, which must be met with a spontaneous response, which, by its swift generosity will bind all the dentists of this continent into one grand American Dental Brotherhood.

The dreadful calamity, accompanied as it is by the terrible lack of tidings, leaves us but one alternative. Without knowing the exact purpose for which we are giving, let us give what we can spare; all that we can spare; yea more than we can spare, for certain it is that many of our California brothers have lost their all.

And when the echo of the appeal for aid shall be wafted back to California ears, let it bear this message: "This is not charity which we offer unto you, but just a glad gift; a meagre token of our appreciation of the fact that had the conditions been reversed, had the suffering come to the North, to the East, to the South, we know that California would have been among the first with her sympathy and her purse. For have we not, only yesterday, at Portland, Oregon, tasted of the glorious hospitality of your people? Then, Brothers, accept our offering, with our love; cheer up, and rebuild your fortunes!"

A Message from California.

While it is as yet impossible to learn the full extent of the loss which California dentists have suffered, the following extract from a letter addressed to the editor by Dr. Adolphe Danziger, a San Francisco dentist who lost everything, must appeal to the hearts of all:

ITEMS OF INTEREST

"Dear Sir:—I was today shown your 'Call to Dentists' for contributions to a fund for the benefit of the dentists at San Francisco. . . . Go on, dear friends, in your noble work. There are no competitive dentists in San Francisco, but stricken brothers, to aid whom is Godly. I may also say that our San Francisco brethren, in the aggregate, are a lot of good fellows, and during the twenty odd years of my practice there I experienced naught but kindness and good will at the hands of my brother dentists. May God stand by them in their hour of trial, and bless your efforts."

If you have reached this point, kind reader, while your heart is touched, and your impulse to aid these men is at its height, turn to your desk and write as large a check as you can and forward it immediately, payable to R. Ottolengui, 80 West 40th Street. And if you are thus prompt, you will only be doing what others have done, for within five days of mailing our circular asking for subscriptions we have collected nearly \$4,000, and more is received in every mail.

The Need of a Vast Sum.

Even without actual knowledge we can present certain facts which will show our readers how great will be the need of money if the local committee is to lend real aid. We hear that a large part of San Francisco has been destroyed, but the mind scarcely grasps the magnitude of the area without some opportunity for comparison. Let those familiar with New York City make a mental picture of the area from Fourth Street to Forty-fourth Street, and from river to river, and then imagine that section practically erased from the map of the city. Those who do not know New York, may imagine a section of their own city, two miles long and two miles wide, entirely obliterated. Then estimate if you can the time which must elapse after a calamity so great, before the citizens will remember their teeth and seek the aid of a dentist? This is the real woe for our brethren. This is why we must be over-generous in our provision for them. The reconstruction of the city will bring immediate occupation to thousands, but the dentists have lost not alone their offices and perhaps their homes, but likewise all opportunity for months to come of earning a livelihood. Therefore again we urge you to contribute, yes, even though you have already sent a check. Perhaps you did not at once realize how great will be the need, or your first check would have been larger. There are about 500 dentists in the stricken section. Four-



fifths of these have lost their offices, most likely, and probably half of them their homes. Therefore, at least \$50,000 should reach the National Committee.

Organization of Relief Committees.

By agreement with the editor of the *Cosmos*, and in order to systematize the relief work as rapidly as possible, the following National Committee was named, and has been adopted by local committees: Drs. V. E. Turner, Raleigh, N. C.; G. V. Black, Chicago, Ill.; James Truman, Philadelphia, Pa., and J. D. Patterson, Kansas City. It is our suggestion that Dr. Patterson should act as treasurer of the National Committee, being nearest to the scene of action. In this the *Cosmos* has agreed. We advise, therefore, that as fast as the local committees collect funds, drafts should be forwarded to Dr. Patterson.

We understand that the object of the appointment of a National Committee is to stimulate the generosity of donors, while assuring them that the funds will be wisely used. The actual expenditure of the fund must largely be left to the wisdom of the California committee. To expedite matters we accept the committee appointed by the Chicago meeting of dentists, but we suggest the addition to this committee of John S. Marshall, partly because of his known executive ability and partly because, as an army dentist, he cannot have been one of the sufferers. The local California committee then would be Drs. John Marshall, L. L. Dunbar, Harry P. Carlton, Wm. Sharp, Jas. Sharp, L. Van Orden and A. E. Baer.

Local Soliciting Committees.

Chicago, with her usual zeal, was probably the first to organize relief work, though New York was only a few hours late. The chairman of the Chicago committee is Dr. Taggart and, when last heard from, they had raised \$2,700. The Philadelphia committee, we learn, has \$1,000, and the Boston committee, with Dr. John F. Dowsley, chairman, \$500.

In New York ITEMS OF INTEREST undertook the work of collecting funds in conjunction with the local dental societies. The following comprise the New York and New Jersey committee: Dr. F. T. Van Woert, president, and Dr. F. C. Walker, treasurer, Odontological Society; Dr. Arthur L. Swift, president, and Dr. H. R. Armstrong, treasurer, First District Dental Society; Dr. Chas. F. Ash, president, and Dr. Winthrop H. Thompson, treasurer, Second District Dental Society; Dr. J. S. Vinson, president, and Dr. Chas. A. Meeker, treasurer, Central Dental Association of Northern New Jersey; Dr. R. Ottolengui, Editor ITEMS OF INTEREST.

ITEMS OF INTEREST

Each of the above named societies sent out a circular letter asking for contributions from their members. ITEMS OF INTEREST sent out four thousand circular letters. There was thus some duplication in this work, but time was short, arrangements for inaugurating the movement being done entirely over telephones. However, as will be seen by scanning the lists, some men responded to the calls from each of their societies, as well as contributing direct to ITEMS OF INTEREST. This is a worthy example.

In addition to the circular to dentists, a hundred special letters were sent by ITEMS OF INTEREST to dealers in dental supplies. Some of these have given their subscriptions to us, while others write that they have already forwarded to Chicago or to local committees.

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Second District members	380.00
New Jersey dentists, through Dr. Ottolengui.....	164.50
New York Dental School students	125.00
New Jersey dentists, through Dr. Meeker.....	106.00
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Ritter Dental Mfg. Co.	100.00
American Dental Trade Association	100.00
A. J. Watts (Crystal Gold)	100.00
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Traun Rubber Co.	50.00
Mrs. Charlotte Lawrence (Lawrence amalgam)	50.00
Consolidated, Boston branch (employees)	26.00
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Lynchburg Dental Depot	5.00
T. O. Tracy & Co.	5.00

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TELEGRAMS.

As we are reading proof of the above, we at last hear from Dr. Marshall, to whom we had wired before hearing of Chicago's selection of a local committee. We also receive a telegram from Dr. Patterson. The despatches read as follows:

"Have received permission to act as Chairman Local Committee. Money and equipments needed.

"JOHN S. MARSHALL."

"Your telegram received—yes! I will act as Treasurer National Committee.

"J. D. PATTERSON."



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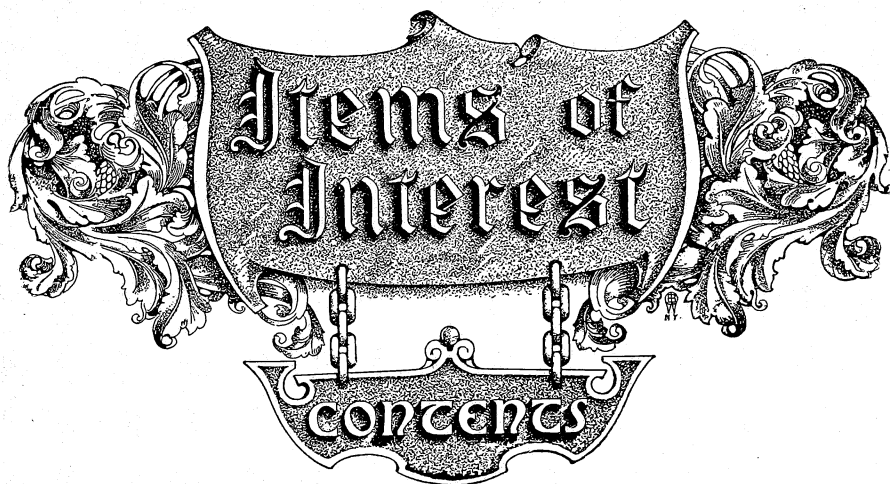
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Vol. XXVIII. No. 12
December
1906



R. Ottolengui, M.D.S.
Editor
80 W. 40th St.
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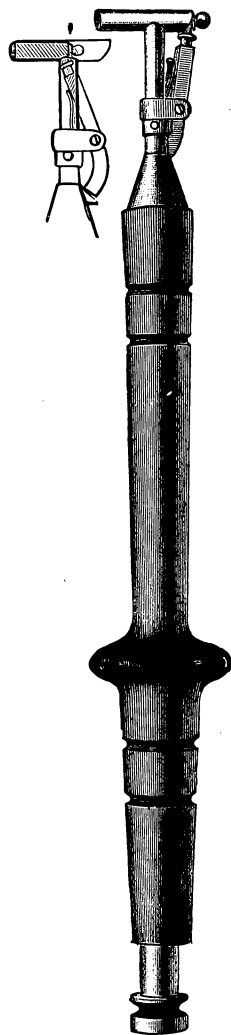
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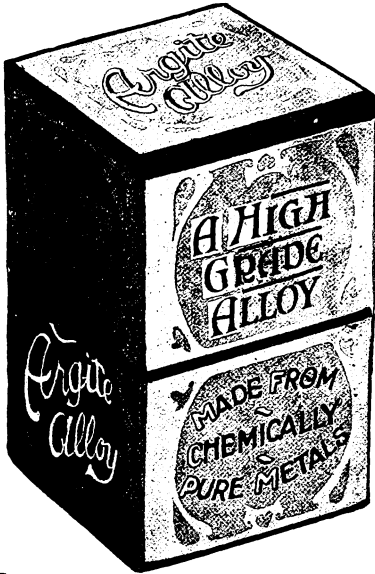
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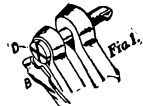
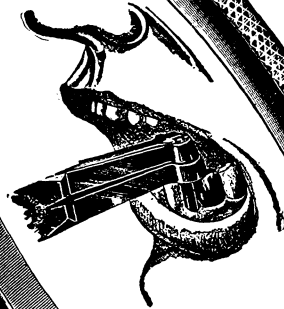


THESE forceps are entirely unique and superior to any other appliance on the market for removing gold crowns. The small knife blade point is inserted under the cervical edge and the plier rim is rested upon the occlusal end of the crown. Then by simply compressing the handles of the forceps the crown is easily slit lengthwise. In this way a crown or bridge anchorage can be readily and neatly removed and the slit crown replaced if wished, by soldering the slit edges of the crown after bringing them together. The great advantage of this slitter is the fact that by turning the knife, the front, side or rear of a crown may be slit with equal ease. All parts of the mouth can be reached with equal facility and without any danger of cutting the cheeks.

One of the reasons why the Consolidated Crown Slitters are so popular is because of their ingenious construction, which admits of slitting gold crowns at any point the operator may decide upon—front, side or rear.

The knife "A" is to be inserted under the cervical edge of the crown and the rim "C" rested upon the occlusal end of the crown. By lifting the spring "B" the knife may be turned in any position so as to cut any part of the crown or reach any tooth with equal facility. The slit "D" in the top of the knife piece prevents it from turning. The knife piece can be taken out or replaced by lifting the spring "B" and turning it on Fig. "F."

Price \$3.50; extra knives 50 cents each



FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  **DENTAL MFG. CO.**
NEW YORK

CONSOLIDATED SLIP-JOINT ATTACHMENT

**In brief, this Attachment is simple, effective
and substantial.**

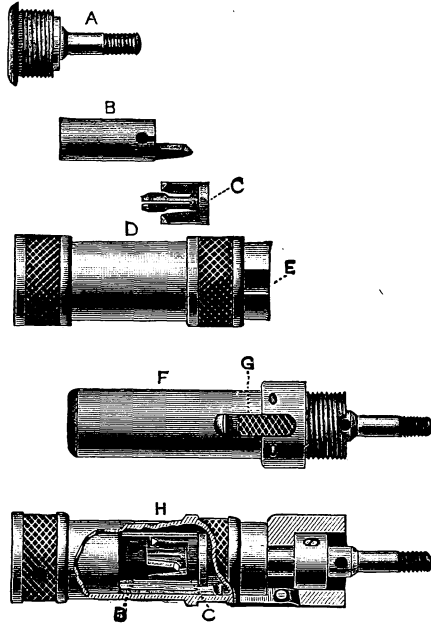
The simplicity of the Consolidated Slip-Joint will appeal to all users. It properly serves its primary purpose, viz. : to assist the operator and facilitate his work. It has no large projecting parts to encumber or interfere with the operator. A complicated attachment can not be consistently classed as a Slip-Joint.

To permit and facilitate rapid interchangeability without diverting the operator's attention from his work, the Consolidated Slip-Joint will be found much more convenient than other styles.

The illustrations show the relative position of each part, between the handpiece and duplex attachment, when assembled.

The method of assembling and operation is as follows :—

The dog B is screwed to the spindle of each handpiece (A) to be used. A collar, D, is screwed over it to the ferrule of each handpiece also. This comprises the proper equipment for each handpiece or mallet. The part F is attached to the duplex attachment. To connect the handpiece the latter is slipped over part F and held firmly by the spring latch G. The part C, which is part of the spindle in the interior of F, engages with the dog B and the split shank binds in the inner wall of the dog as shown in H. It thus becomes an auxiliary clamp and takes effect simultaneously when the handpiece is slipped on. We furnish 2 dogs and 2 collars when Slip-Joint is ordered, unless otherwise instructed.



PRICES

Complete, with 2 dogs and collars.....	\$6.50
Dog, each .....	.25
Ferrule, each	1.00
Part, each	3.75

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

CONSOLIDATED HANDPIECE

THE striking and long troublesome defects which have heretofore pronounced the shortcomings of the Universal Handpiece, viz., the sectional and loose-jointed spindle, the insecure bur chuck and the exposed oil-covered and dirt-collecting section of the spindle coming in contact with the operator's hand, have been entirely eliminated in this new model.

In the Consolidated Model the entire length of the spindle is in one piece, forming a continuous rigid shaft with broad end-bearings. The effect is that of a long bearing in which there is no vibration and no lateral wobbling of the bur.

A very important advantage is the provision which automatically takes up the wear, both that of the bur shanks and in the handpiece parts. Even though the wear is infinitesimal or the opposite variation as much as one-sixty-fourth of an inch, the chuck adjusts itself automatically to take it up. The claim made for other handpieces is that they will take any shank of the standard size. The deficiency of this limited range is at once demonstrated not only by the variation in the gauges of bur shanks made by dental manufacturers, but by the wear always resulting from constant use.

By loosening a single screw, No. 7, the entire case can be removed and the running parts oiled through a single hole. The entire spindle is enclosed, no oil-covered parts are exposed and leakage of oil is prevented.

Watch-work best expresses the character of its construction. Noiseless light running and durability are guaranteed. It is the product of ingenious ideas and skilled mechanical workmanship; for practical use a more serviceable handpiece has not been devised.

CONSOLIDATED HANDPIECE

ONE PIECE SPINDLE

No Oil Covered Sections Exposed.
Automatic Locking Chuck for
Shanks of Various Gauges.

OPERATION

The bur is locked in the handpiece by simply pushing the slide, No. 1, upward.

The operation involved is illustrated in the cross-section, figure 2. When the slide, No. 1, is pushed upward, the ratchet, No. 2, is pushed against the dog, No. 3, which acts as a lever. Its toe, No. 4, moves upward, transmitting the leverage directly against the chuck No. 5, which closes as it rises higher into the diminishing space between the converging walls of the nose. The intense pressure against the chuck clamps it on the bur shank which thus becomes a rigid projection of the spindle. The pressure is evenly distributed on all parts of the chuck. The standard size shank can be tightly locked when the ratchet, No. 2, is pushed up only one step. Shanks of smaller diameter are locked by advancing it further and it will be seen that the ample range provides for shanks of various diameters.

The case, No. 6, can be removed by loosening screw No. 7. To take up wear between the spindle and the case, turn screw No. 8, to bring the case closer to the shoulder, No. 9. The handpiece is oiled through a hole in the spindle directly under No. 7.

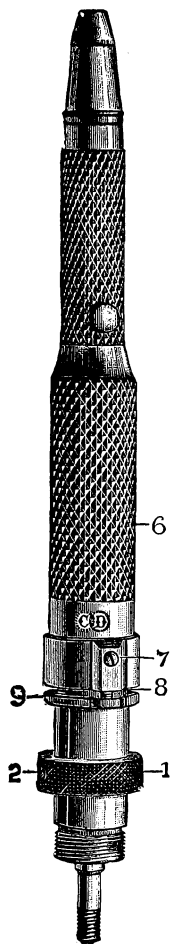


Fig. 1

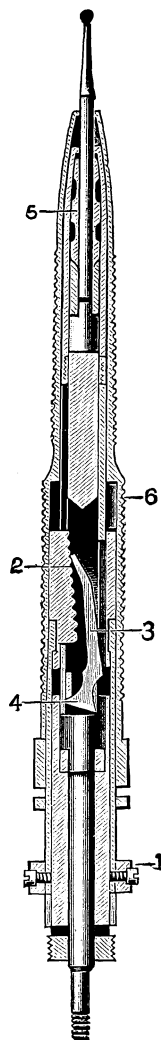


Fig. 2

PRICE \$7.00

FOR SALE AT ALL LEADING DENTAL DEPOSITS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK



DESENSITOR

AN efficient, reliable and harmless anesthetic composed of Hamamelis, Alcohol, Iodoform and 1% Escain Cocaine.

Upon its injection it desensitizes the tissues at once. It never fails. It is always safe. It does not cause sloughing of the gums. The ingredients favor the prompt healing of a wound. There are no toxic effects.

DESENSITOR is an assistant, not an obstacle, and there is no other local anesthetic with which a dentist can work so confidently. Price \$1.00 per ounce, \$5.00 per six ounces.

Consolidated  Dental Mfg. Co.
NEW YORK

An Eminent Authority

states: "Complete anesthesia, because of the dangers and inconveniences it entails, should be the exception in dental surgery. On this fact is based the importance of local anesthesia."

You can avoid unnecessary strain and anxiety by the use of an efficient and reliable local anesthetic.

Try
DESENSITOR

Sample bottle
sent on request.

\$1.00

PER DOZEN

\$10.00

PER GROSS

**The Price of a Standard Bur!
To Pay More Is Sheer Excess.**

**We do NOT advance the
mere claim that the**

REALIZATION BUR

**is "just as good" as any higher
priced bur.**

IT IS SECOND TO NONE!

A TRIAL PROVES IT!



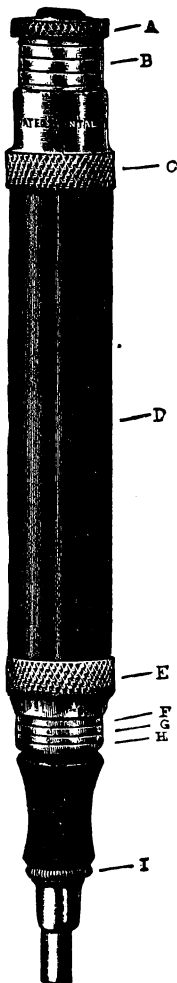
GET THE SEALED PACKAGE.

**FOR SALE AT ALL LEADING
DENTAL DEPOTS.**



The "PERFECT" Automatic Mallet

**HAVING A VARIABLE STROKE
WITH A VISIBLE ADJUSTMENT**



The movement of the socket piece of this instrument may be varied, and the fall of its hammer may thereby be adjusted to either one-twelfth, one-eighth or one-sixth of an inch, at the pleasure of the operator. The parts are rigidly held, when adjusted, by the knurled ferrule E. The adjustment of the instrument is shown by the scores F, G, H. If F is barely in sight at the edge of the ferrule E, the instrument will have its longest stroke, and the hammer will be lifted one-sixth of an inch. To lessen the lift of the hammer, loosen the ferrule E from its bearing against the tubular portion, D, grasp the smaller section at I, and screw it into the section D until one of the scores G, H, is brought to the edge of F. Then tighten E against D.

By screwing the smaller section of the case, I, in or out a little, the amount of "slack" or distance which the spring catch passes by the hammer catch to insure its engagement, can be adjusted. In this instrument, the "slack" can be made more or less, to suit the ideas of its user.

The force of the spring which actuates the hammer is regulated by the screw cap A, which is screwed into the section D to increase the force of the blows. It is held securely, when adjusted by the knurled ferrule C; the force of the blow being estimated by the number of the scores B which are exposed. The more of them there are in sight, the lighter will be the blow.

The shank is fitted to take either cone socket or automatic plugger points.

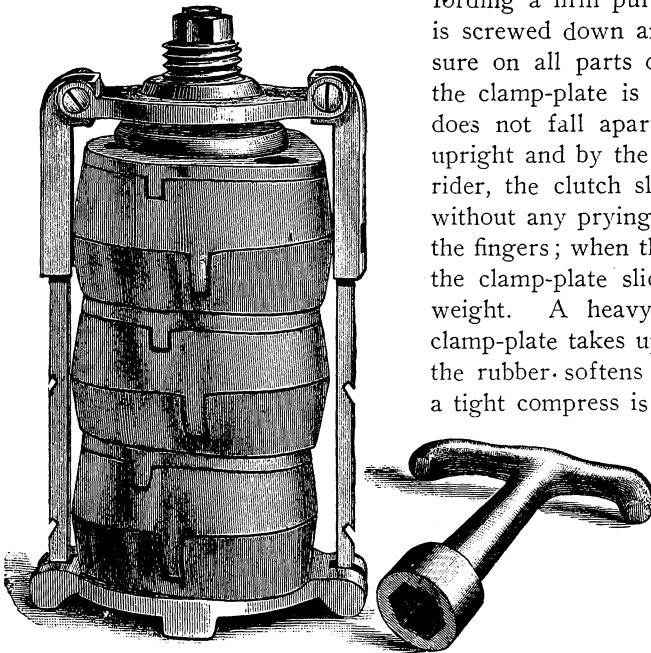
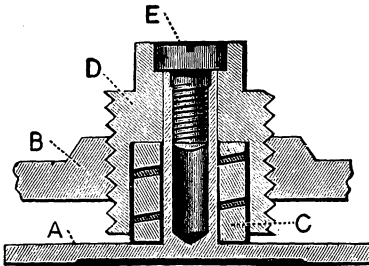
The workmanship and finish of "Perfect" Mallet is what its name implies. The outer casing is of hard rubber, and the metal parts of the casing are nickel plated.

Price, \$5.00

Consolidated Dental Mfg. Co.

The Consolidated Donham Flask-Press

(PATENT PENDING.)



The illustration shows how this flask-press can be adjusted to take either one, two or three flasks. Pieces of pipe heretofore required on the rigid frame Donham Flask-Press are dispensed with. The clamp-plate slides up and down on the frame bars; a clutch in the rider grips the notches in the frame bars, affording a firm purchase when the plate is screwed down and insures even pressure on all parts of the flasks. When the clamp-plate is unscrewed the frame does not fall apart. The bars remain upright and by the hinged action of the rider, the clutch slips out of the notch without any prying or handling to burn the fingers; when the flasks are removed the clamp-plate slides down by its own weight. A heavy spring "C" in the clamp-plate takes up the shrinkage when the rubber softens in the flasks. Thus a tight compress is insured even though

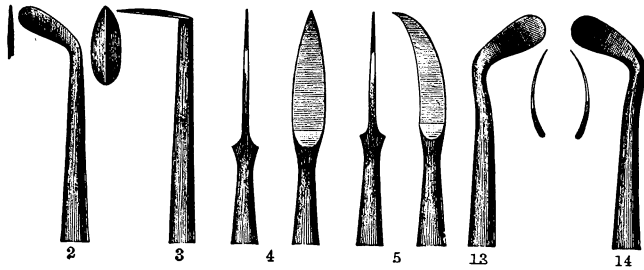
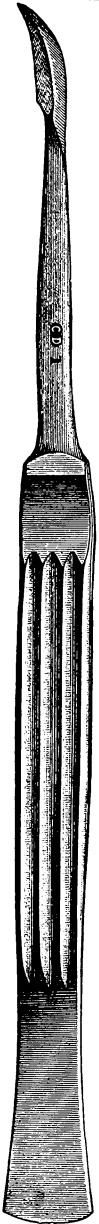
the cases and flasks shrink to the improbable extent of one-quarter of an inch. The clamp-plate, riders and spring are made of tempered steel. All

the other parts are of solid brass—nickel dipped. A long hook for lifting it from the vulcanizer is furnished with each press. This press is simple, strong, of very small bulk and unusually easy to adjust.

Price complete, without Flasks, \$3.50

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

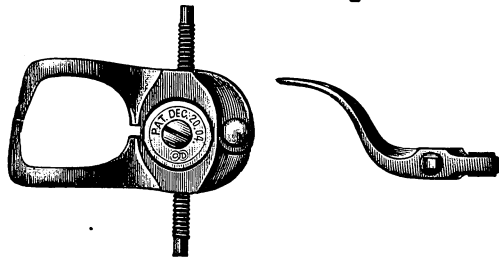


Aseptic Gum Lancets

These instruments are made in one piece, of the finest steel, nickel-plated. The double blades are properly tempered to maintain the sharp, keen edges. They can be easily sterilized without being injured. As shown in cut, the serrations in handle afford a firm grip.

Price, 60 cents each

The Crescent Separator



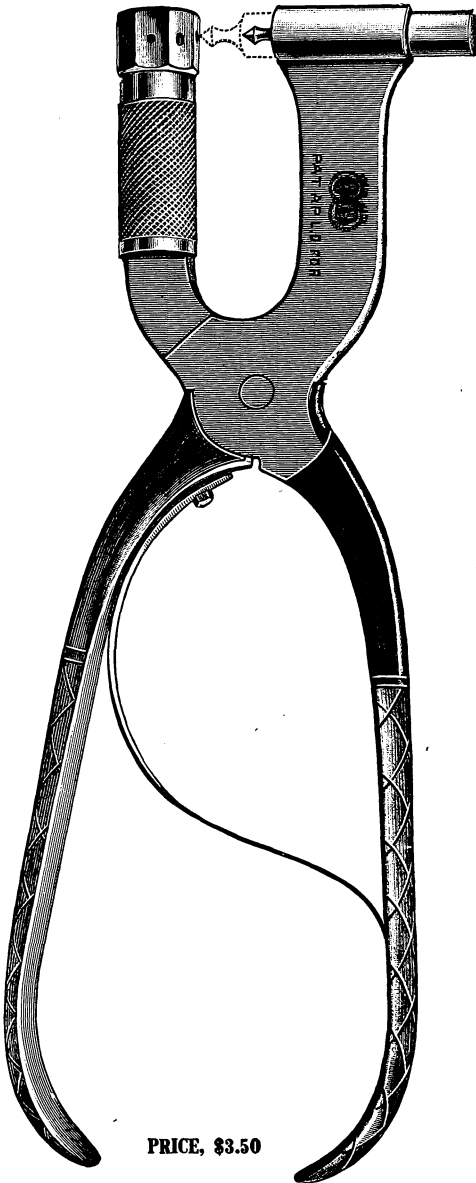
This separator is simple, compact and easy to adjust. It can be used with equal facility in any part of the mouth, and in operation it is more convenient and less bulky than other separators now in use. Both jaws are movable, but one only should be worked at a time, according to the side of the mouth operated upon, the other, not in use, should be screwed up tight. The small cut shows how the instrument lies on the surface of the tooth permitting the insertion of the wedges close to the gum, if necessary. It is simple and effective; of particular advantage is the fact that it does not obstruct the operation. It is regulated by a separate screw key. The edges of separator are beveled. Separator and key are made of finest steel, nickel-plated.

Price, \$2.50

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

CONSOLIDATED RUBBER-DAM PUNCH



PRICE, \$3.50

In design and construction this is the most improved and practicable rubber-dam punch on the market.

A unique device of decided practical value is the octagonal-faced cylinder, perforated with six holes of different diameters.

Its inner bearing is grooved and by the action of a ball-ratchet the cylinder is held firmly in any desired position under the point; by revolving it, each face stops automatically with the hole exactly beneath the point.

While holding the dam in place it is easy to turn the cylinder without interference, as the serrated end, or grip, is entirely free. This design affords ample space to punch the widest dam at any place.

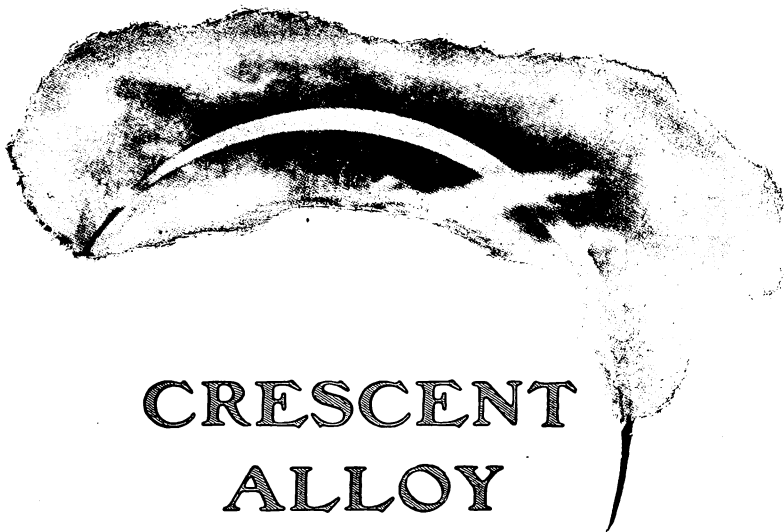
The cylinder faces are of extra hardened and tempered tool steel with sharply cut holes, and are sufficiently broad for practical purposes.

The cone-shaped point is made of the same selected steel and will punch either large or small holes perfectly in dam of any thickness.

This Rubber Dam Punch is an example of the finest dental instrument that can be produced with modern machinery and skilled workmanship.

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK



CRESCENT ALLOY

is prepared scientifically to produce conditions most desirable in an alloy. Its ingredients are pure and its working qualities perfect. It is very strong, with ample edge strength, and its density will resist all the strain of mastication. It sets moderately, allowing sufficient opportunity for manipulation. There is absolutely no shrinkage. Its purity is absolute guard against discoloration of the teeth. The use of CRESCENT ALLOY insures a permanent filling and a guarantee of satisfactory work.

Price \$1.50 per ounce, in shavings and filings.

FOR SALE AT ALL LEADING DENTAL DEPOTS

Consolidated  Dental Mfg. Co.
NEW YORK

Consolidated Impression and Investment Compound

Superior in many respects to plaster for taking impressions, soldering Investments, and making Cast Metal Dies.

It does not adhere to the teeth, but gives an impression of the mouth, which, for evenness of surface and glossy appearance, surpasses anything that can be obtained with plaster.

Its smoothness permits spreading evenly and freely into the spaces between the teeth or fissures in the crowns, overcoming all the annoyance incident to the use of plaster.

It is especially advantageous for soldering investments and making cast metal dies.

The finished die made from this compound shows every line, tooth and undercut as sharp and distinct as the lines of an etching.

Put up in neat tin cans. Price, per can, about one quart, or two pounds, **25 cents.**

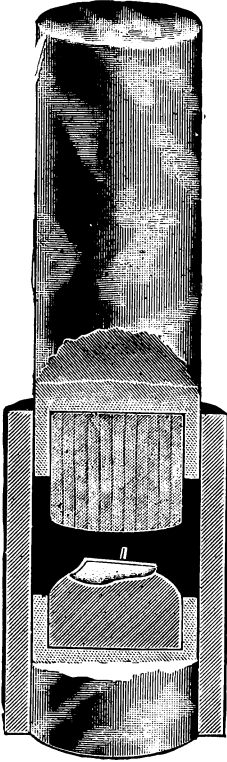
Large size can containing ten pounds, **\$1.00.**

FOR SALE AT ALL LEADING DENTAL DEPOTS

Consolidated  Dental Mfg. Co.
NEW YORK

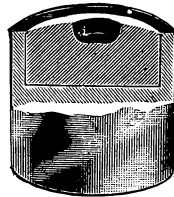
Philadelphia Cleveland Detroit Boston Chicago

The AJAX SWAGER



THIS swaging outfit consists of four parts, viz: The usual plunger, sleeve, cup and an extra cylinder.

All parts are made of steel to withstand the most severe usage to which swagers are placed in dental work. This is a practical device for swaging gold cusps, matrices for inlays, forming backings for artificial teeth or crowns, making seamless bands, and metal shaping in general required for crown and bridge work. Its range of usage is very wide, making it essential to the



equipment of a modern dental laboratory. Crown and bridge workers will find this swager of continual assistance and can select

no device more useful, time-saving, practical or economical for the innumerable purposes it serves. It is guaranteed against chipping, bending or becoming otherwise defective through swaging operations. The wax or lac used for the impression is specially prepared, and is of the proper consistency for clean, sharp impressions, facilitating accurate swaging.

Price, copper oxidized, including lac, \$2.00)

A set of directions is included with each outfit.

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.

NEW YORK

CRESCENT STRIPS

THIN STRONG

Made
of linen of maximum
strength and expertly charged
with selected abrasives. They are
cut with a clean, smooth edge and can
be operated in the narrowest spaces between
the teeth. **THIN, STRONG** and rapid cutting are

Crescent Finishing Strips

In Garnet and Carborundum.

All Grits and Widths.

Odorless! Unsurpassed for Efficiency and Durability

Crescent Polishing Strips

have no cutting properties. Will not scratch or change
the contour of the surface produced by the finishing
strip. We have incorporated in this strip a com-
position which produces a high polish.

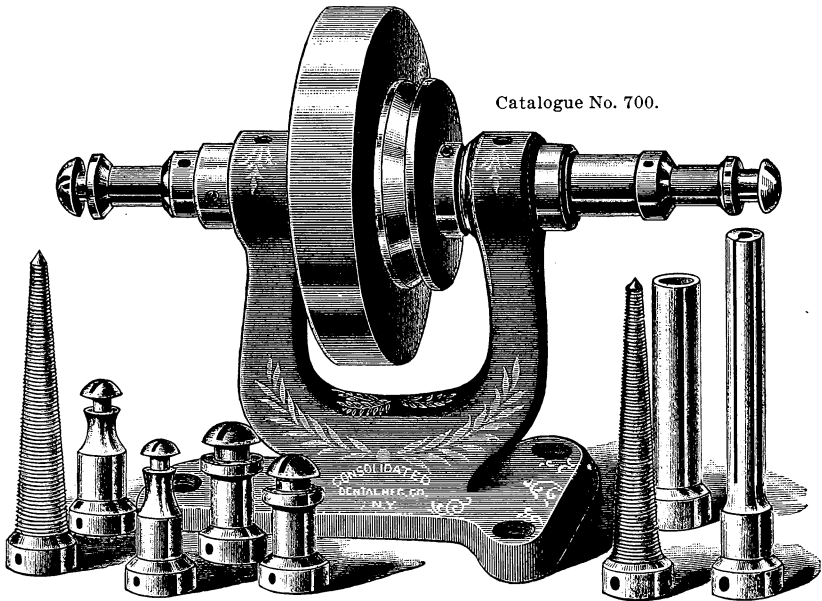
Put up in three widths, narrow, medium or wide,
and in boxes of assorted widths.

**All Styles 50 cents
per box**

For Sale at all leading Dental Depots

Consolidated  Dental Mfg. Co.
NEW YORK

THE TRUE RUNNING LATHE-HEAD



Catalogue No. 700.

This lathe is one of the finest pieces of machinery which can be produced in a modern factory. The best selected material is used throughout and skilled workmanship has brought its running qualities and finish to the height of perfection. The extra heavy balance wheel insures true, firm revolution, not surpassed in ball-bearing machinery. The adjustable bearings are of bronze, which is used in the best implements of this character. The shaft is turned out of fine steel; it may be easily oiled without smearing. A full equipment of ten chucks to rigidly hold burs, discs, and brush wheels completes the outfit. Small burs may be fastened directly in the end of the spindle, for which it is specially designed.

Price, \$8.50

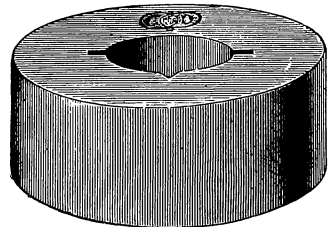
CASTING RING

An uncommonly good one—made of steel, not cast-iron, like the others on the market. Cast-iron is apt to be full of blow-holes, and is usually porous—you can't get good results using it. The use of steel in our ring insures a smooth surface to which the molten metal will not adhere. It is nickel-plated and of sufficient weight to form a good base, but not too heavy for easy handling.

Price, without Fusible Metal, \$1.50

Fusible Metal, per ingot, - - .30

About Two Ingots are Required to fill the Ring.

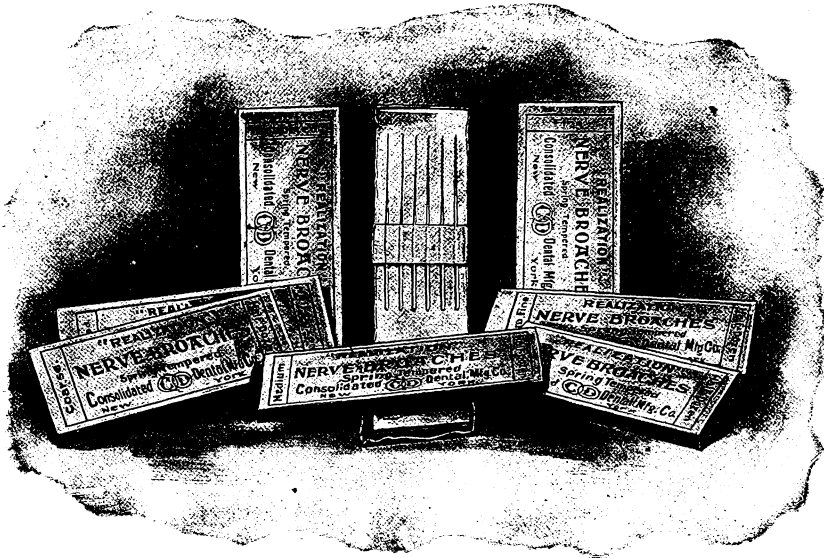


FOR SALE AT ALL LEADING DENTAL DEPOTS.

Consolidated Dental  Manufacturing Company
NEW YORK

Realization Broaches

Characterized by remarkable
FINENESS FLEXIBILITY STRENGTH



THE alignment of the barbs is scientifically accurate. They are not mere projections standing out at all angles, but are uniform in length and are carefully inclined with the tips in a perfectly straight line.

The high quality and temper of the Realization Broaches compensates for all reduction in material and also insures against breakage.

Their flexibility and toughness is a strong and rare combination.

Realization Broaches are very susceptible of manipulation in the exploration of sensitive and tortuous canals.

No root canal is tortuous enough to break the most slender Realization Broach if used with ordinary care.

FIVE SIZES:

Extra Fine, Fine, Medium, Coarse and Assorted, 1-2 Dozen in a package

PRICE, \$1.00 PER DOZEN

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

DR. OTTOLENGUI'S ROOT REAMERS AND FACERS

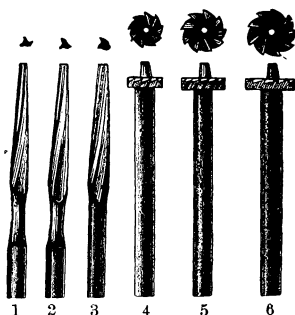
These Reamers and Facers are now made entirely by machine. This new departure has resulted in an improved and unequalled instrument. The Ottolengui Reamers and Facers have always been the approved styles and have long been famous. With the marked improvements now inaugurated, their desirable properties have been multiplied, and at the same time the new method and larger quantities produced enable us to reduce the price.

Being made by machine, the size, shape and angle of the blade is always uniform, and the cutting edges are in the exact circumference of a circle. This scientific accuracy is only obtainable in instruments cut by machine. The minute dimensions of so fine an instrument cannot be measured by the human eye, and quality as well as accuracy is sacrificed in the expense of making them by hand.

The new process permits the use of steel specially tempered to preserve the razor edges. The ease of trimming a root with these keen, smooth Facers is a relief to operators and a comfort to patients.

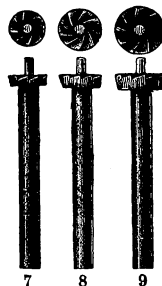
No. 7 fit is supplied unless other style is specified.

Catalogue
54
Number



Perhaps the most universally used of all instruments for adapting the natural root to a porcelain crown is the set invented by Dr. Ottolengui. The reamers (Nos. 1, 2, 3) have smooth ends and cut only on the sides. They are used to enlarge the canal after it is drilled to the proper depth to fit the pin of the crown. The top of the root is then readily shaped with Facers, Nos. 4, 5, 6, the guide point acting as a pivot.

Catalogue
54 A
Number
(Safe-Side)



These new Root-Facers supplement the Ottolengui Facers as means for paring the labial borders of the root-end beneath the gum-margin to conceal the junction of the crown with the root. Obviously the rounded side of the new Facer renders it safe from liability to wound the gum at its free margin.

PRICES REDUCED TO

Nos. 1, 2 and 3, each, \$0.50	Nos. 6, each, \$0.60
" 4 and 5, " .60	" 7, 8 and 9, " .60

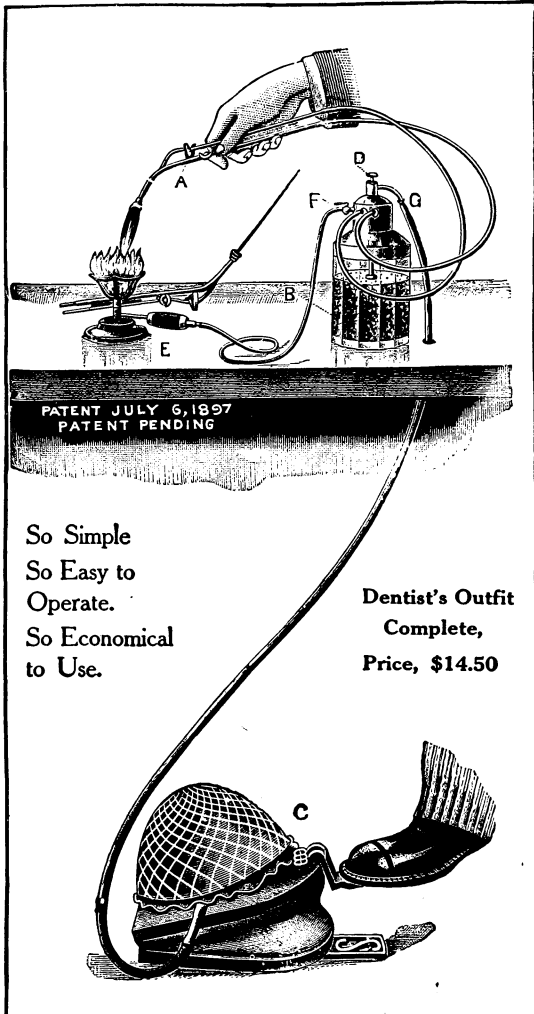
FOR SALE AT ALL LEADING DENTAL DEPOTS
CONSOLIDATED DENTAL MFG. CO.
NEW YORK

SAMS' IMPROVED COMBINATION Blow Pipe Outfit

With Glass Generator. Burns Best With No Free Oil.

An absolutely SAFE glass generator is provided, and it contains no free gasoline. The mixture of air is regulated by the valve on the top of the generator, and size of flame is governed accordingly. This valve serves to graduate the air supplied above the absorbent and there mixed with the vapor laden air forced through the absorbent, thereby insuring absolutely correct proportions for perfect combustion under all conditions. A powerful flame may be maintained for a great length of time without impoverishing the fluid; this is impossible where free gasoline is present. The improved thumb valve on the blowpipe permits instant or gradual change of flame from heavy brush to the finest needle point. When set, the valve remains permanently in position and an unvarying flame is produced. This outfit is absolutely "non-blow-out." The valve will not leak gas and no gasoline can be drawn back into the Foot Bellows because there is NONE FREE, which may be demonstrated by inverting the generator. By means of a special clip the Handpiece will stand on the work bench in any desired position.

This is the original and genuine "Sam's" outfit. Beware of imitations.



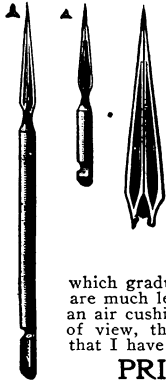
So Simple
So Easy to
Operate.
So Economical
to Use.

Dentist's Outfit
Complete,
Price, \$14.50

Price Complete, \$14.50. Without Bellows, \$10.50. Glass Generator, only \$6.00.
Blow Pipe, \$2.50. Bellows, \$4.00. Case Heater, \$2.00.

SOLE AGENTS

CONSOLIDATED DENTAL MFG. COMPANY



PULP-CANAL REAMER

Devised by Dr. J. Leon Williams

In describing this instrument Dr. Williams says: "It is a modification of the three-sided reamer, but the modification is much the most important feature of the tool. Each of the three sides is deeply grooved. The result of this grooving is two-fold. It makes an instrument which is as easily sharpened as an excavator, and which can, therefore, be kept in the finest cutting condition until worn out. The grooves also render the tool self-clearing. It never clogs, it cuts very rapidly, and there is not the slightest danger of forcing it through the side or end of the root. It leaves roots which have a curvature at the end in the best possible condition for treatment with sulphuric acid or by any other method, i. e., with a large cone-shaped opening giving an abundance of room for working and seeing. It cuts away more of the infected dentine with less destruction of the root than can be accomplished by the use of any other instrument. And, finally, it leaves the root canal exactly the shape required for the strongest and best form of pin for crown-work—a pin which is largest and strongest where it joins the crown and

which gradually tapers to a fine point in the end of the root. Crowns with a pin of this shape are much less liable to get loose because the pin can be made much longer. Also, one never finds an air cushion beneath a pin of this shape when cementing a crown in place. From every point of view, therefore, I regard this as much the most valuable instrument for opening pulp canals that I have ever used.

PRICE, EACH

60 CENTS

THE BRYANT NERVE CANAL DRILL

(Patented.)

TO THE PROFESSION

The following is Dr. Bryant's statement concerning his drills:
To the Profession:—While other canal drills are formed to resemble a cone or bud shape, having the greatest resistance at the base of the drill head, causing them to bind and choke up in the canal, and requiring so much forward pressure to enter the canal as to greatly increase the liability of twisting or breaking off the blades, we offer a canal drill based strictly on a mechanical principle, viz., a cone base to base.

This drill being thus shaped meets the greatest resistance at the center of the drill head, the cutting blade gradually increasing in width and increasing in thickness from the non-cutting or safety point to the center of the drill head, then, gradually decreasing in width and decreasing in thickness, to the base of the drill head; allowing the point of greatest resistance to come on the cutting-blades, at the center of the drill head where they are strongest, which enables the drill to enter the canal so evenly and rapidly that it requires about one-third of the forward pressure to enter a canal that is required of other drills.

These drills are especially designed to facilitate the operator in preparing all dead teeth and roots of teeth valuable for the retention of porcelain crowns, bridge work, etc., which becomes so laborious and unsuccessful with other drills.

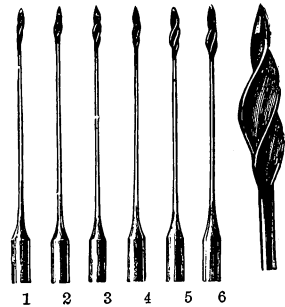
Our testimonials endorse all we claim for this drill, viz., a ready follower, a rapid cutter, complete ease of penetration, positively will not clog up in the canal, throwing all canal contents directly backward and down the canal; when dull, can be sharpened by running a fine emery disk on the cutting blades with a dental engine; they are made with a requisite size shank to insure strength for all work called upon, with enough flexibility of shank to properly follow and cut tortuous canals. They comprise a set of six numbers in straight drills for use in the canals of the upper teeth, also a set of six numbers to be used in the right-angle attachment for the canals of the lower teeth.

In preparing the canals of the different teeth we advise the use of several numbers, especially so in the canals of lateral, bicuspid and molar teeth. Their perfect adaptation and durability with the ease of their rapid cutting, the saving of time and labor to the operator, with assured success in all operations for which they are designed, without that constant dread of breaking or twisting off in the canal, will commend them to all conscientious and progressive operators for a trial.

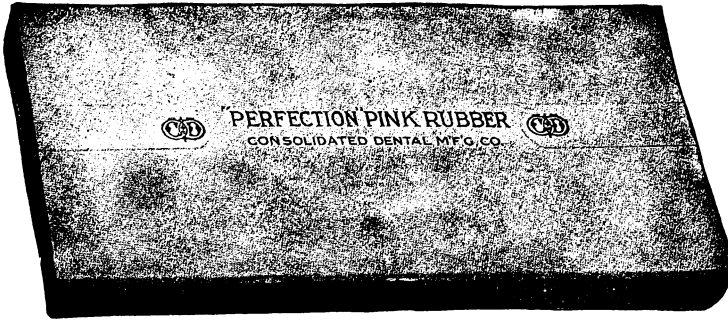
Your patients will pay you a good price to save a dead tooth, or a root that is valuable for capping or crowning, even any method proposed by you to escape extraction. If you have had failures with other drills, try these and be assured of success, and success means the gratitude of your patient with a greater income to yourself.

My experience teaches that no part of dentistry will advertise your fame so largely and thoroughly as successful operations which, in saving extraction, promote the continued use of the natural teeth.

CHARLES H. BRYANT.



PRICE, EACH, 35 CENTS



The Appearance of Vitality

is an essential point in modern dentistry. Work must be more than well done; it must appear "live." Hence the importance of

Perfection Pink Rubber

which is unmatched for exquisite color and life-like finish. It is very tough and strong, with necessary elasticity and may be used for all the purposes of vulcanite rubber. It does not fade or discolor. Sample on request.

Price, per half pound box, . \$3.00

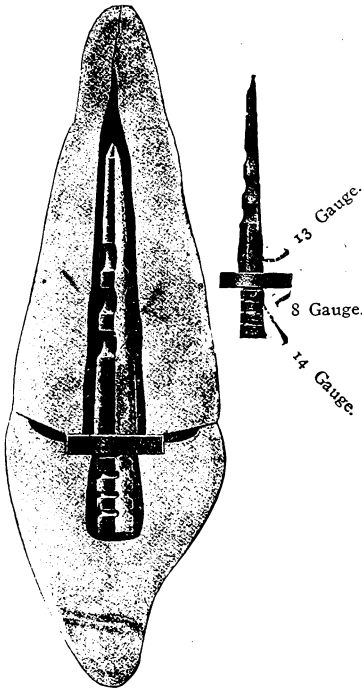
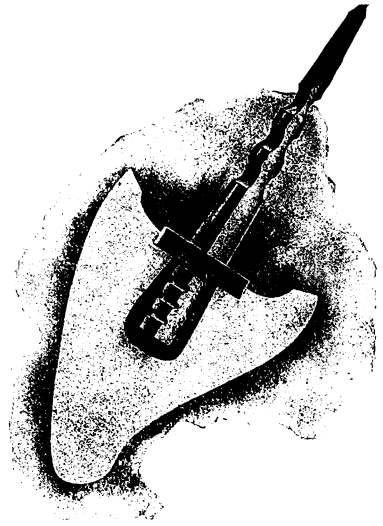
" " quarter pound box, 1.50

FOR SALE AT ALL LEADING DENTAL DEPOTS.

Consolidated Dental  Manufacturing Company

NEW YORK

The Strength of the natural tooth is closely approxi- mated when the DAVIS CROWN is correctly set



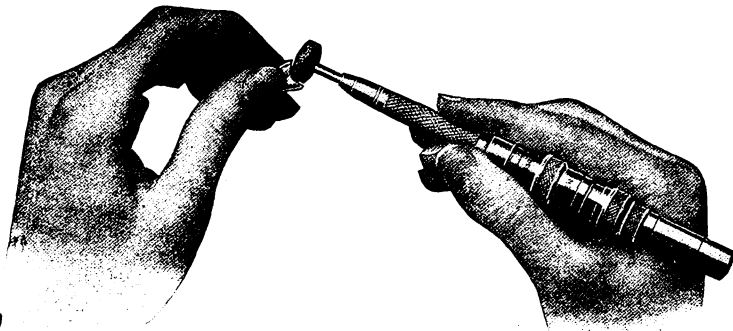
¶ In support of this claim the clinical demonstrations at the Dental Exposition recently held in Chicago are strong evidence. A root was shown, the canal of which had been followed up by a Crown Root Reamer. When the shoulder-pin of the Davis Crown was pushed up into the canal it was found to bind, in the manner of a screw; thus illustrating that a minimum sacrifice of tooth structure and only a very small amount of cement are necessary to secure the setting.

¶ The strength of the root is conserved and by the correct shape of the pin—conforming to the root canal—a close fitting attachment is made.

¶ Strain is thereby transmitted almost directly to the root structure. There is no bulk of cement to give way. The closest possible union of root and crown is effected.

THE DAVIS CROWN is sold by Leading Dental Dealers Everywhere.

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK



Exact Grinding Makes Accurate Fitting Easy and accurate fitting is scientific dentistry.

By using the Davis Crown the dentist is enabled to make an accurately fitted and impervious joint, quickly and without difficulty. Not only can he dismiss bands from further consideration, but he can actually conceal the line of junction by his art.

This is one of the many important advantages resulting from the combination of features which has made the Davis Crown pre-eminent for strength and durability of attachment in both crown-work and bridge-work.

That Live-Tooth Appearance

of the Davis Crown is the most natural and beautiful adornment obtainable for high-class work.

Get the new Davis Crown Booklet from your dealer, or write to

Consolidated  Dental Mfg. Co.
NEW YORK

Philadelphia Cleveland Detroit Boston Chicago

LEAMING'S "VULCAN" CARBORUNDUM

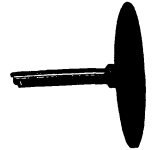
DISKS, WHEELS AND POINTS

These wheels are made by a new process, rendering them very sharp and tough. They are practically unbreakable, and do not become gummed like ordinary corundum. The character of the binding material makes them so tough as to allow of remarkable thinness all the way through to the mandrel, thus rendering their use possible in places inaccessible with the old-fashioned wheels. Many operators use them as a substitute for the diamond, as they readily cut the enamel; and they can be used for preparing cavities in porcelain teeth.

Each wheel is trued and securely mounted on plain mandrel for the dental engine while in the mould, and is guaranteed to run absolutely true.

The Vulcan Disks and Thin Wheels can be had "Safe-sided" if desired; and will be furnished either side smooth, as called for.

Order by number.



No. 480.

Attention is particularly called to No. 480. It is very thin and flexible, but tough, and will bear a hard push edgewise. Intended for separating and polishing.

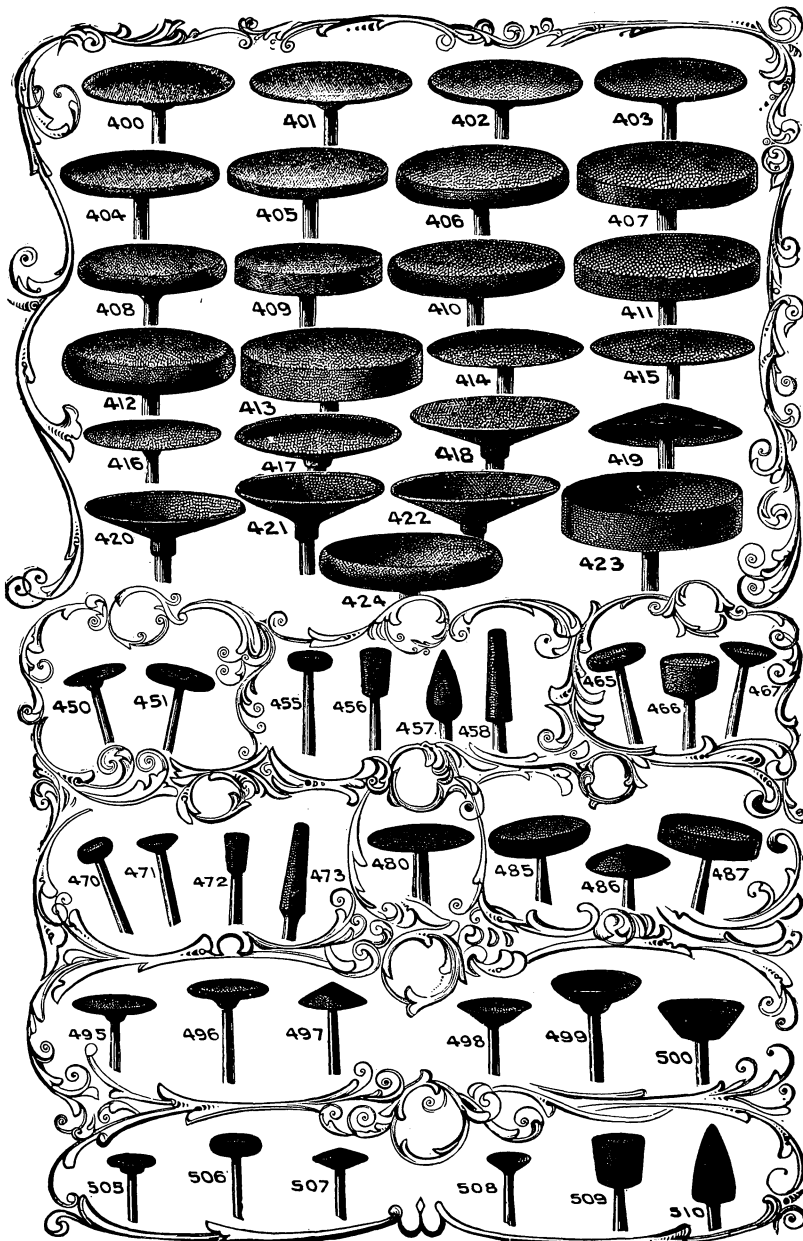
PRICE, PER DOZEN,	-	-	\$2.50
PRICE, EACH,	-	-	.25

FOR SALE AT ALL LEADING DENTAL DEPOTS

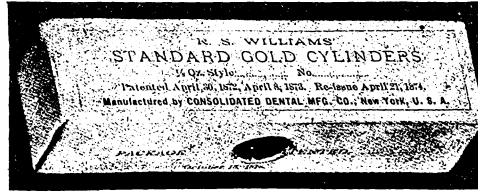
CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

LEAMING'S "VULCAN" CARBORUNDUM

DISKS, WHEELS AND POINTS



Standard Gold Cylinders



Style A



These Cylinders are made of Standard Corrugated Gold Foil. They are used almost entirely as pellets, and are unequalled for rapid work. These cylinders are the Original Gold Cylinders, being the first ever put in the market in salable form. Previous to 1871, the only cylinders known were those made by dentists who folded foil into narrow ribbons, which were afterward rolled on a broach into cylinders one at a time. These old-style cylinders were used in the wedging-process; and were entirely unfit for use as pellets, being radically different in construction from the style A cylinders. The style A cylinders mark the origin of the most valuable form of prepared gold foil ever sold, and from them have sprung all the imitations in this country and Europe.

Prices:— $\frac{1}{8}$ oz., \$4.00; $\frac{1}{4}$ oz., \$7.75; $\frac{1}{2}$ oz., \$15.00; 1 oz., \$29.00;
2 oz., \$56.00; 5 oz., \$137.50

Style A, Short



These vary in length from 2-32 inch to 3-32 inch. Assorted lengths in each bottle of 1-8 oz. Cylinders 1-4 A, Short, illustrate the nicety to which this manufacture has been carried. There are about 2,500 cylinders in 1-8 oz., or about 20,000 in an oz.

Style A, Long

Vary in length from $\frac{1}{4}$ to $\frac{1}{2}$ inch.

Prices:— $\frac{1}{8}$ oz., \$4.00; $\frac{1}{4}$ oz., \$7.75; $\frac{1}{2}$ oz., \$15.00; 1 oz., \$29.00;
2 oz., \$56.00; 5 oz., \$137.50
No. $\frac{1}{4}$ A, 25c. per $\frac{1}{8}$ oz., extra

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

Standard Gold Cylinders

Soft Non-tipping

(Nos. $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$, 2, 3, Assorted)



These are similar to style A cylinders, but are much softer. Their adaptability is readily seen in starting difficult cavities without retaining points. Try them without annealing, but if annealing is needed, use the lowest heat which will give the desired result. Use Cohesive Foil, Electric Gold or Crystal Surface Gold for the surfaces.

Note.—Owing to their delicate nature, a fine point will go through them when loose, but after being partially condensed, they are tough and of excellent working quality. For the same reason care is needed not to melt the edges in annealing.

Cohesive Non-tipping

(Nos. $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$, 2, 3, Assorted)



This style was suggested by Prof. J. A. Watling. They are strictly cohesive, and are intended for such use only, but are so made that they are not objectionable on account of harshness. The small sizes, in particular, can be used to some extent as soft cylinders before annealing; but it is intended that they should be annealed before using, and be used cohesively.

Use the lowest heat which will answer the purpose, but generally a dull red will be best. Heat quickly, because continued holding at a red heat will produce harshness without increase of cohesion. There is reason to believe that, in addition to the novelty of the process by which these are made, it is also the simplest and cleanest known.

Note.—Owing to their delicate nature, a fine point will go through them when loose, but after being partially condensed, they are tough and of excellent working quality. For the same reason care is needed not to melt the edges in annealing.

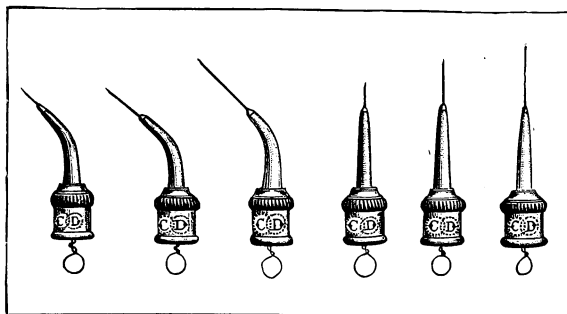
Prices:— $\frac{1}{8}$ oz., \$4.00; $\frac{1}{4}$ oz., \$7.75; $\frac{1}{2}$ oz., \$15.00; 1 oz., \$29.00;
2 oz., \$56.00; 5 oz., \$137.50

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.
NEW YORK

CONSOLIDATED HYPODERMIC NEEDLES

NON-LEAKING



THESE points are made in the most careful manner of best French seamless tubing of special high carbon steel alloy which resists corrosion. The point is reinforced by the extension of the outer tubing as illustrated, preventing leakage, bending and looseness. The needle points are perfectly drawn and sharpened so as to enter the gum or flesh readily with little pain and without leaving a large or ragged wound. The special feature of these needles is in the high-tempered, seamless points, which guarantees against leakage, affords largest possible calibre in the finer sizes and maintains a sharp, keen edge.

Straight and curved.

Three gauges—25, 26 and 27.

Three lengths—short, medium and long, as illustrated.

No. 26 gauge is always sent unless other size is specified.

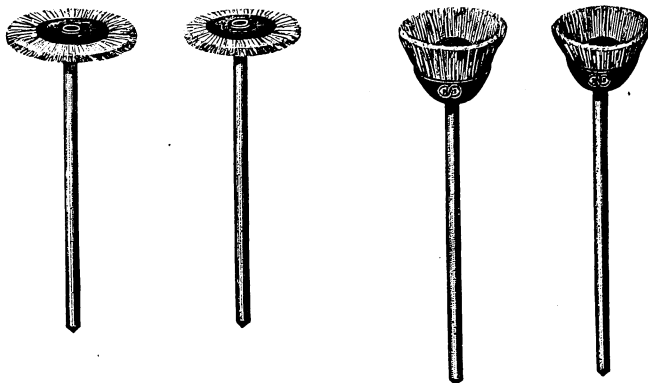
Put up in aluminum boxes of one dozen each.

PRICES

Straight, each . . .	\$0.10	Curved, each . . .	\$0.15
Straight, per dozen	1.00	Curved, per dozen . .	1.50

BRISTLE BRUSHES ON MANDRELS

PATENT APPLIED FOR



THESE brushes are permanently mounted on true mandrels to fit Universal Chuck handpieces.

They are particularly effective in reaching and cleaning the lingual surface of the lower incisors as well as minute interstices between the teeth.

They are made of pure selected bristle, with polished nickel hubs having smoothly finished rounded edges, and are bound securely to guarantee against loss of bristle.

They can be sterilized without injury.

The styles are:

Straight, large, stiff, white
Straight, large, stiff, black
Straight, large, soft, white
Straight, small, stiff, white
Straight, small, stiff, black

Cup Shape, large, stiff, white
Cup Shape, large, stiff, black
Cup Shape, large, soft, white
Cup Shape, small, stiff, white
Cup Shape, small, stiff, black
Cup Shape, small, soft, white

Use the stiff for cleaning and polishing the teeth, polishing amalgam fillings, cleaning burs, reamers, etc.

Use the soft for polishing gold fillings.

These brushes are warranted to run absolutely true and uniform and will hold the pumice better than any other brush of this character that is made.

Put up in boxes of one-half dozen each.

PRICES

Each	.	.	.	.	.	.	\$0.10
Per dozen	.	.	.	.	.	.	1.00
Per gross	.	.	.	.	.	.	9.00

LISTERINE

**The best antiseptic for
a dentist's prescription**

1881+25=1906

A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many practitioners that Listerine is the best antiseptic to prescribe for daily use by the patient in the care and preservation of the teeth. The mild, stimulating effect of the free boric acid radical in Listerine is of the highest importance in maintaining a healthy equilibrium of the fluids of the oral cavity. At best, alkalies simply temporarily neutralize the acid-forming ferments which the carbohydrates of food produce in the mouth,—a true antiseptic prevents that fermentative change.

Literature will be forwarded upon request, containing a brief résumé of recent bacteriological investigations supporting the above argument.

Lambert Pharmacal Co.

St. Louis, U. S. A.



EXCHANGES

EXCHANGES

NOTE.—Rate for advertising in this department of ITEMS OF INTEREST is ten cents per word including captions. "Wanted," "For Sale," "Exchanges," etc., and address. Initials charged as words. Rate for agency advertisements is twenty cents per word. Advertisements should reach us by the 15th of the month to insure insertion in the following month's issue, and are payable in advance. CONSOLIDATED DENTAL MFG. Co., Publishers, 130 Washington Place, New York, N. Y.

4755—FOR SALE.—Two dental chairs in good condition. Also several dental articles. Address "MRS. DR. M.," Box 397, Walden, N. Y.

4756—FOR SALE.—\$2,500 practice in Central Illinois. Excellent town and country. Snap for young man. Price \$350. Address No. 4756, care "Items of Interest," No. 130 Washington Place, New York.

4757—WANTED.—Position as assistant. Competent, conscientious, thorough workman. Graduate, '05; registered in Mass. Good address and temperate habits. Address "ASSISTANT," care "Items of Interest," 130 Washington Place, New York.

4758—Good dentist can have established Illinois business. A bargain. Address "RETIRE," care "Items of Interest," No. 130 Washington Place, New York.

4759—Successful country dentist wishes to associate with older dentist in eastern city. Will buy out associate when ready to retire. Address L. K. THAYER, D.D.S., Charlestown, N. H.

4760—FOR SALE.—Established, cash practice, doing twenty-five hundred dollars. Fine office in Massachusetts town, ten miles from Boston, eleven thousand population. Sell for four hundred dollars. Will stand investigation. Address "C.," Consolidated Dental Mfg. Co., No. 120 Boylston St., Boston, Mass.

4761—FOR SALE.—\$2,000 practice and outfit in town of 15,000, near Pittsburgh, Pa., \$600 cash. Address "J.," care Lee S. Smith & Son, Pittsburgh, Pa.

4762—FOR SALE.—Established practice in Western New York with salaried position at bargain. Good proposition to right man. Address "ATKALINE," care "Items of Interest," No. 130 Washington Place, New York.

4763—FOR SALE.—Account eyes, at inventory. Established practice 20 years. Address C. H. WATERHOUSE, Sherman, N. Y.

4764—WANTED.—Position by experienced mechanic. Best references. Total abstainer. Address "R.," care "Items of Interest," No. 130 Washington Place, New York.

4765—FOR SALE.—\$4,300 to \$4,500 practice in fine Connecticut town of 14,000. Established 13 years. Up to date in every way. Fine opportunity for good man. Present owner forced to change climate. Closest investigation invited by man who is looking for an honest deal and has the money. Address "M. Z.," care "Items of Interest," No. 130 Washington Place, New York.

4766—ASSISTANT WANTED.—Splendid opening for young lady, registered New York State, in high class private practice in New York City. Address No. 4766, care "Items of Interest," No. 130 Washington Place, New York.

4767—WANTED.—Sanitol stock. State price. R. W. MACDONALD, Erie, Pa.

4768—FOR SALE.—A good practice in a town of 3,000 inhabitants. Address "DELAWARE," care Consolidated Dental Mfg. Co., Philadelphia, Pa.

See following page.

4769—FOR SALE.—Practice in splendid Kentucky city. Address "BONANZA," care "Items of Interest," No. 130 Washington Place, New York.

4770—FOR SALE.—Less than invoice. Well equipped dental office. Prominent transfer corner Chicago. Address "ILL HEALTH," care Consolidated Dental Mfg. Co., Chicago.

4771—FOR SALE.—Down town dental office, established five years. No. 207 Old Inter-Ocean Bldg., Chicago.

4772—FOR SALE.—\$5,000 practice. Box 1312, Hartford, Conn.

4773—WANTED.—A first-class all round man. State age and wages. Address No. 4773, care "Items of Interest," No. 130 Washington Place, New York.

4774—WANTED.—Partner. Good cash practice, established six years. Address G. W. REYNOLDS, Ratesville, Ark.

4775—FOR SALE.—Best dental office in Southern Michigan town of 40,000 population. Cash business \$100 per week. Sickness cause of sale. Price

inventory \$1,500. Address No. 4775, care "Items of Interest," No. 130 Washington Place, New York.

4776—FOR SALE.—Fifty shares of Sani-tol stock. Address No. 4776, care "Items of Interest," No. 130 Washington Place, New York.

4777—A dentist having fitted up several operating rooms with gas, electricity and wash basins, hard wood floors, will let one room. Location near 42d Street and Fifth Ave. Out-of-town dentists wishing an office a day or so a week could make arrangements. Address No. 4777, care of "Items of Interest," No. 130 Washington Place, New York City.

4778—WANTED.—Situation by good all round man. Graduate. Registered in New Jersey. Address No. 4778, care "Items of Interest," No. 130 Washington Place, New York.

4779—Will sacrifice practice in manufacturing town of 2200 in Southwestern Michigan. All modern improvements and furnishings. Fine country. Established eight years. Going to California. Invoice \$800.00. Address "C. D.," P. O. Box 74, Niles, Michigan.

The act that the fixed-pin porcelain crowns are out of date and relegated to the old fashioned class, demonstrates an achievement for the

DAVIS CROWN

WITH DETACHED PIN

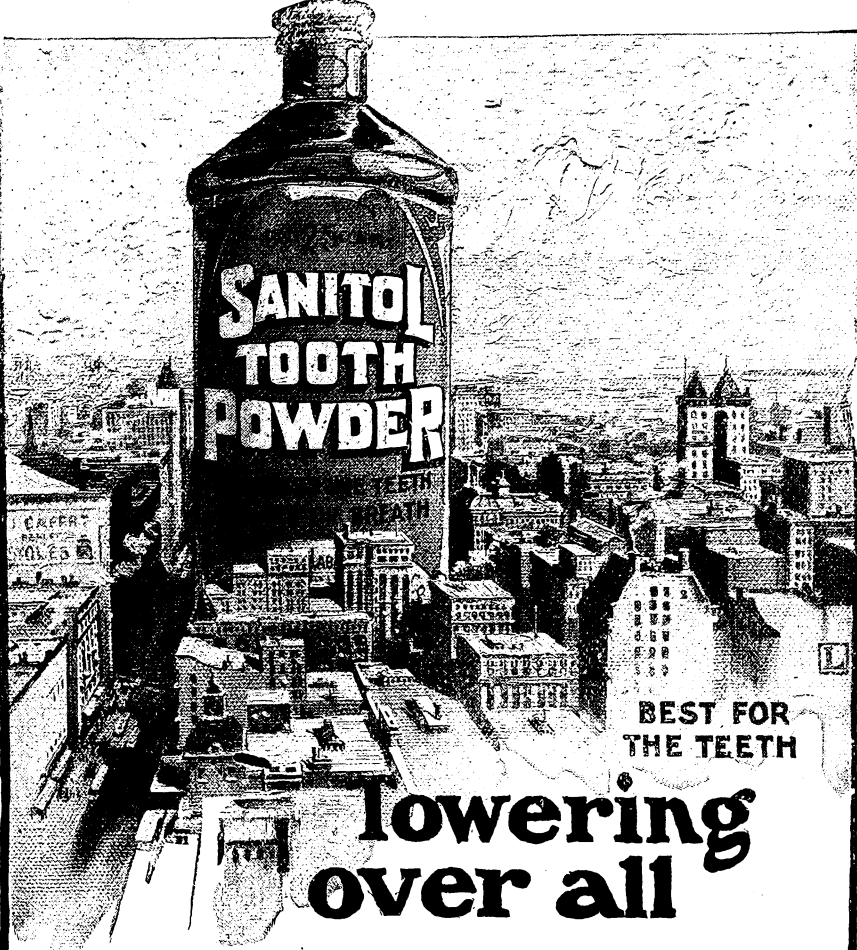
The convenience of fitting a Davis Crown without the interference of a pin is alone a boon which placed the Davis Crown immediately in popular favor upon its introduction. Its remarkable "Live Tooth" appearance is a distinct feature through which the Davis Crown has become famous and superior to all other porcelain crowns.

For sale by all leading dental dealers

Send for Catalog

CONSOLIDATED  DENTAL MFG. CO.

130-134 Washington Place, New York, N. Y.



**BEST FOR
THE TEETH**

**lowering
over all**

¶ In popularity and efficiency, Sanitol Tooth Powder has rapidly become a great cleansing force in modern civilization.

¶ The food we eat—many of our habits of life—are apt to be destructive to the health of both teeth and mouth.

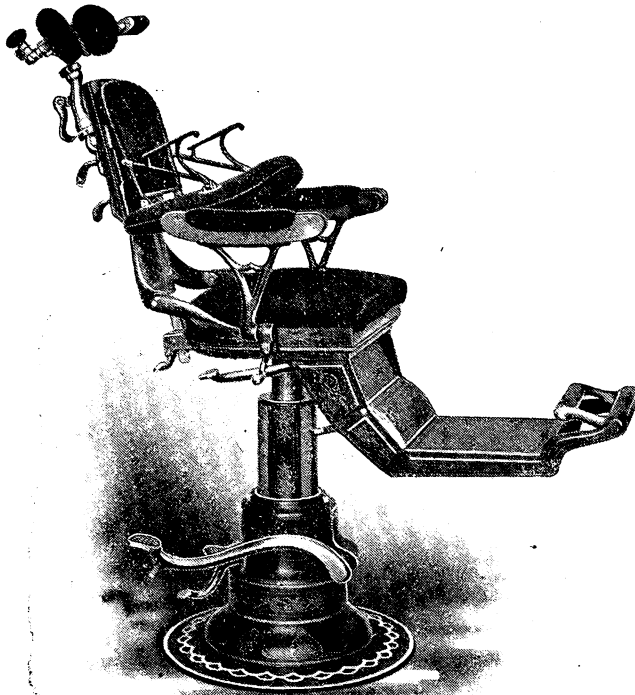
Sanitol Tooth Powder

uniting its *searching antiseptic qualities* with the *production of free oxygen* in the mouth, destroys every vestige of germ life and produces a gleaming, natural whiteness of the teeth. It is cooling and refreshing, a mouth tonic which tastes good long afterwards. Its use will be a pleasant revelation to you—in the immediate results.

Individual package sent **FREE** for trial. *Regular Size at Your Druggists 25c.*

THE SANITOL CHEMICAL LABORATORY CO.

St. Louis, Mo.



The Imperial Columbia Dental Chair

is the latest and most perfect Columbia chair. It offers several marked improvements over its predecessors and is immeasurably superior to all other dental chairs.

The improvements consist in a greatly improved method of lowering and raising the back and a device whereby when the back is lowered, the patient's head is not pulled from the headrest; an ingenious, simple, serviceable child's chair; a much better device governing the tilting of the chair body; movable arms with many useful functions; a heel rest for short legged people; a headrest capable of more comfortable adaptations; and a sanitary rubber foot pad in place of carpet.

The chair is made with Columbia skill and thoroughness and has received the beautiful Columbia finish.

All leading dealers take pride in selling it.

The Ritter Dental Mfg. Co.,

Rochester, N. Y.

C 857

An Ethical Dentifrice and an Honest One

TO meet the demand for an honest, ethical, antiseptic, non-acid Liquid Dentifrice, SOZODONT was produced, and has for sixty years been finding increased favor in every land where teeth are cleaned. Later, SOZODONT Tooth Powder was produced in answer to the general need for a Tooth Powder free from pumice, charcoal, powdered quartz or grit of any kind, yet with sufficient abrasive properties to make it valuable as a cleanser and polisher of the teeth. Now SOZODONT Tooth Paste has been introduced. It combines the good qualities of the Powder and Liquid. It is delightful to use and is free from any harmful materials.

For years we have tried to educate the public to call upon their dentists once or twice a year and in the meantime cleanse and preserve their teeth by the use of our SOZODONT preparations. The LIQUID at night to prepare the mouth against the mouth acids that will accumulate during the hours of sleep. In the morning either the POWDER or PASTE to polish the teeth.

We make big claims for our SOZODONT preparations, and will stand back of every one of them. When we say a thing is so, the dental profession can safely take our guarantee.

SOZODONT is called "The Honest Dentifrice" because for all these sixty-odd years we have never spared an effort in making a dentifrice that the teeth require.

We stand upon our own bottom and do not require your financial assistance to help manufacture and distribute our product, but we do solicit the honest patronage of every honest dentist.

Those dentists who have stood by SOZODONT have never had anything to regret.

We will appreciate your request for literature and samples.

HALL & RUCKEL

NEW YORK CITY

Is the strength on which you must depend and which should be husbanded for more important tasks, being wasted on the treadle of a foot engine?

Wouldn't it be well to delegate such fatiguing work to some agency which has neither back nor nerves to wear out. For a few cents a day (generally less than five cents) a Columbia Electrical Engine will do all your drilling without fatigue, fuss, or failure, will do far more than you could and will do it better.

The actual value of current consumed monthly by a Columbia Electrical Engine is rarely over twenty-five or thirty cents, though most Electrical companies charge \$1.00 per month for an engine; even this is only four cents per working day.

Don't wear out before your time. Whether you have alternating or direct current, or none at all, we can tell you how to make a Columbia Electric Engine do your work faithfully at very small expense.

Write us. We will take up your case personally.

The Ritter Dental Mfg. Co.

ROCHESTER, N. Y.

ATLAS DENTAL LABORATORY CO.

INCORPORATED

W. J. TRUMPOUR, MGR.

35-37 RANDOLPH ST.

PHONES: CENTRAL 1780
AUTOMATIC 5780.

CHICAGO.



"Trifles Make Perfection, But Perfection is no Trifle."

Was that last piece of bridgework received from your favorite laboratory satisfactory, or did it need strengthening with a little more solder, a little more time in finishing, a little more care all around? We ask this because we know the ordinary laboratory evils. The statement that we have overcome them is only of interest to those who are not yet our customers.

If you are interested in good laboratory work and will co-operate with us to the extent of furnishing good impressions, models, etc., send us the case you now have in hand.

ATLAS DENTAL LABORATORY CO.

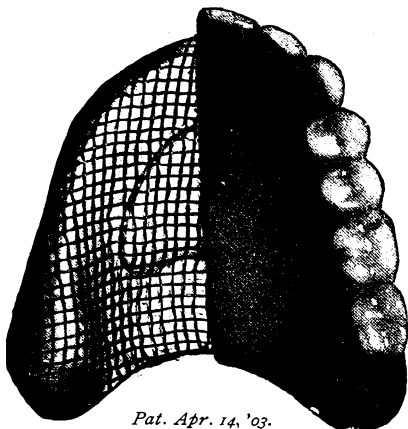
Why Oxyphosphate of Copper?

IN the early tests of this material in the practice of the Originator, it was found that the working and embalming properties were such that cavity preparation could be much slighted with the result of semi-decalcified dentin being changed into a very dense and sterile substance. Also that wholly decalcified organic matrix when present as the only remaining covering for a pulp would be transformed into an ideal capping.

Q Ames' Oxyphosphate of Copper will be tolerated and have a salutary effect upon normal or reasonably healthy pulp tissue. In addition to its germicidal properties it has great density, strength and adhesiveness, making it the most valuable plastic for filling many posterior teeth, and setting many crowns, bridges and regulating appliances.

Q It is the very best plastic in the management of deciduous teeth and imperfect fissures of partially erupted permanent molars.

Manufactured by the Originator **W. V-B. AMES**



If you **HAVE** never dealt
with us **YOU** had better.
We can be **SEEN** at any time.
Perhaps **OUR** style
and **FINISH** will
be just what you need on your

CROWNS—BRIDGES—PLATES—ETC.
SAML. G. SUPPLEE
874 BROADWAY **NEW YORK**

Quality is a distinguished and characteristic excellence or superiority.
Reputation is the character which is derived from a favorable public opinion.

Triggs Dental Charts

Have long been well and favorably known to the best members of the profession, because their **QUALITY** merits the **REPUTATION** they have earned.

Ask your dealer for our booklet or write to

Consolidated Dental Mfg. Co.

HOME OFFICE, 130 Washington Place, NEW YORK

BRANCH HOUSES:

Boston

Detroit

Cleveland

Philadelphia

New York

Chicago

Agencies throughout the United States and Canada

Maybe We're Foolish

WE MAY BE FOOLISH TO GIVE AWAY A BOOK WHICH WE MIGHT JUST AS WELL SELL FOR A DOLLAR OR TWO, BUT WE BELIEVE IT IS PAYING US TO DO IT BECAUSE THE MORE SPECIALISTS THERE ARE IN ORTHODONTIA IN THIS COUNTRY THE MORE LUKENS' REGULATING APPLIANCES ARE SURE TO BE USED.

THE BOOK WE SEND YOU FOR NOTHING FIXES YOU SO YOU CAN DO REGULATING WORK AS SUCCESSFULLY AS ANY MAN WHO MAKES A SPECIALTY OF IT, AND AS IT TELLS THE STORY MORE BY PICTURES THAN BY WORDS IT IS EASY TO GRASP, AND IF YOU PRACTICE WHAT IT PREACHES THE TWO-CENT INVESTMENT YOU HAVE TO MAKE TO GET IT WILL BE EASILY THE MOST PROFITABLE INVESTMENT YOU EVER MADE IN YOUR LIFE.

THE NEW AND GREATLY ENLARGED SECOND EDITION OF THE BOOK IS NOW READY FOR DISTRIBUTION.

LEE S. SMITH & SON, Sole Agents. PITTSBURGH, PENN.

Lee S. Smith & Son, 808 Penn Ave., Pittsburgh, Pa.
 You may send Dr. Lukens Book on Orthodontia
 without charge to
 Name _____
 Street _____
 City _____
 State _____

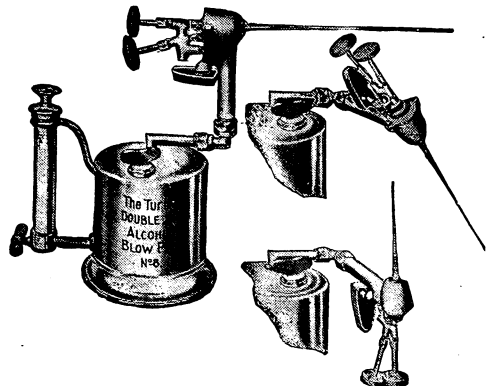
AN ALCOHOL FLAME

AUTOMATIC BLAST—3000 DEGREES—ADJUSTABLE

The Turner Alcohol Blow Pipe No. 8 burns either wood or grain alcohol. The flame is intensely hot, needle-pointed and non-oxidizing and excellent for platinum or gold-soldering. The burner is swiveled permitting the flame to be turned in any direction as shown in the cut. The reservoir holds one pint which will last about three hours burning at full blast.

Simple to operate.

Send for Catalog.



No. 8 Alcohol Blow Pipe. Price \$7.50 each.

THE TURNER BRASS WORKS

30 N. Franklin St.
CHICAGO, ILL.

Beauty, Utility and Quality

The products of The American Cabinet Company have three distinguishing features:

BEAUTY Our Cabinets are designed by experts. Years of experience in designing high grade furniture enables us to give you exclusive designs that will prove attractive in your office, and leave a most favorable impression in the minds of your patients.

UTILITY Hundreds of testimonials, voluntarily given, show that we have acquainted ourselves with the needs of the dentist in this line. Our furniture is arranged so as to bring all instruments and supplies in the most convenient places.

QUALITY For a quarter of a century our products have been known throughout the world as the best of their kind.

You will find the workmanship and finish on our goods first class in every respect, and the materials used are of the highest grade.

NEW YORK CABINET NO. 61



New York Cabinet No. 61—Closed

This is an entirely original plan for a Dental Cabinet.

Notice particularly the large tray suitably arranged for nearly all instruments and supplies, and also the racks for long-handled instruments. Both tray and racks are in the most convenient place possible, and enable you to reach for anything you want without the trouble of opening and closing a lot of drawers. While in plain sight of the operator standing, very little can be seen by the patient in the chair.

Also notice the convenient arrangement of the Medicine

Closet, which accommodates all sizes of bottles.

Glass covered slides pull from either end, and a convenient mixing slide from the front.

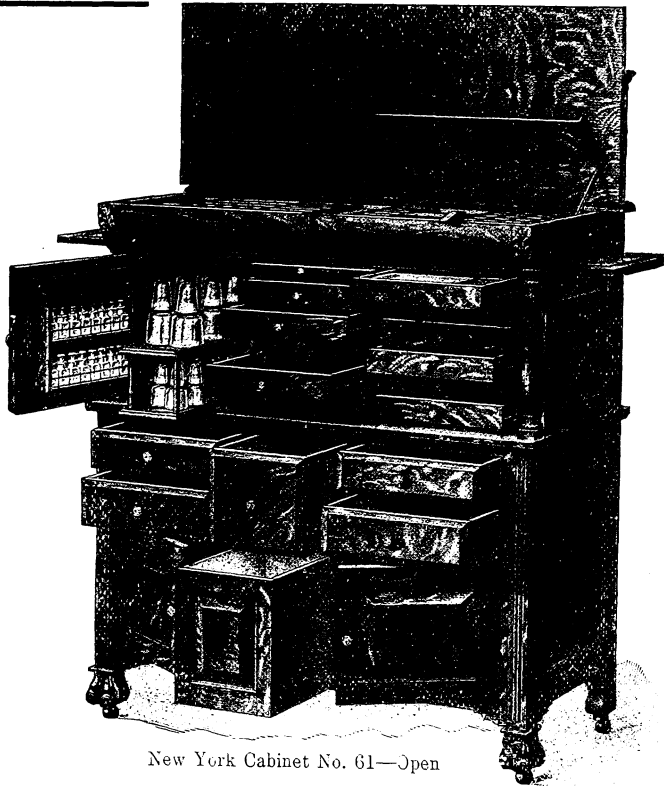
Forceps are kept in drawers so arranged that they cannot come in contact with each other.

Enameled lined drawer is provided for soiled linen.

Filing block with zinc tray is a handy contrivance, and the whole Cabinet will be found "a thing of beauty and a joy forever."

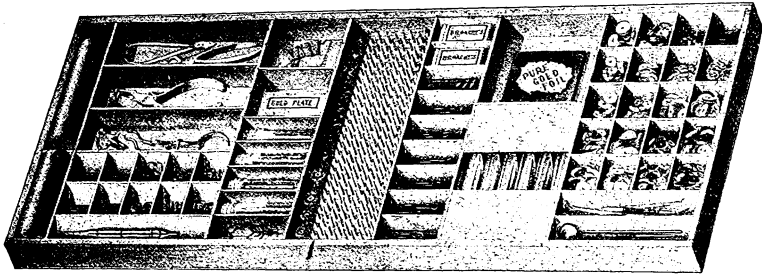
PRICE

$\frac{1}{4}$ -sawed Oak, any
finish . . . \$110.00
Mahogany . . . 125.00



New York Cabinet No. 61—Open

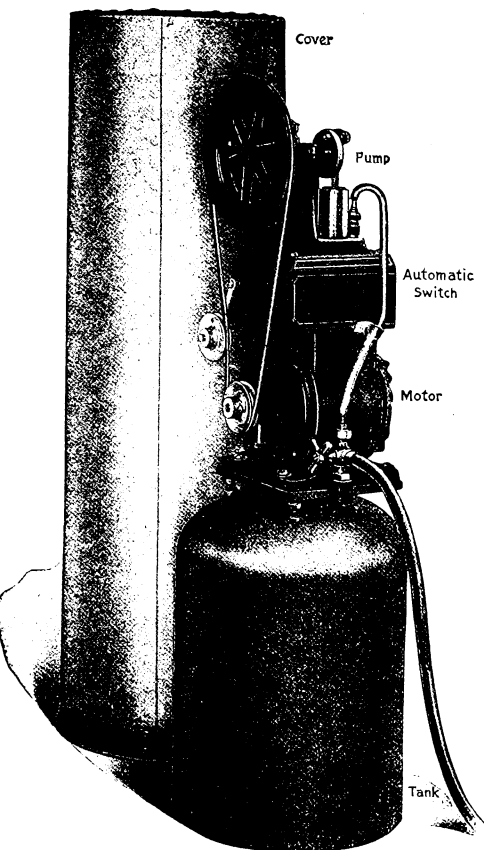
Notice how many different articles can be accommodated in the tray. Its location is such that everything is at your fingers' tips.



Ask any prominent dealer for our catalog and late circular of LOW CABINETS, or write us direct.

The American Cabinet Co.

Two Rivers, Wisconsin



A Compact, Efficient, Compressed Air Outfit Which Maintains the desired Air Pressure.

Our new Automatic unit comprises, in small and compact form, an electrically driven motor controlled by an automatic switch, the air pump, and the tank with all pipe connections, valves, etc.

The air tank is 10 inches in diameter by 14 inches high, and serves as a base for the motor and pump.

The outfit furnishes ample air for the chair and laboratory; it pumps rapidly and the pressure is quickly restored.

The switch governing the motor is automatic. When the air pressure falls to 20 lbs. the switch closes and starts the motor. When maximum pressure is reached the switch opens and pumping ceases. There is thus always ample air pressure.

A cylindrical cover conceals all working parts and deadens any slight noise they may make.

This is an ideal compressed air outfit for the operating room or the laboratory. It is very compact. It does away with all piping, switches, etc., and requires only the air line from the air tank to the switchboard.

It is rapid and efficient and noiseless.

For direct current, \$80.00. For the alternating current, \$95.00.

Order one from your dealer to-day and give it a trial.

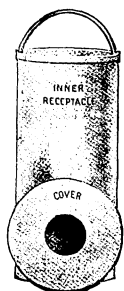
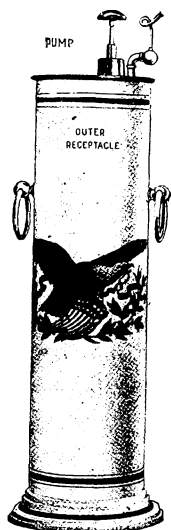
The Electro-Dental Mfg. Co.

1228 CHERRY STREET

C 210

PHILADELPHIA, PA.

The Clark Reservoir Cuspidor does not require running water



It permits completely flushing the bowl many times in the most agreeable and efficient manner, and emptying the soiled water at the most convenient seasons.

On top of a hollow enameled pedestal is placed a bowl similar to that used in a Clark Single Bowl Spittoon. Above the level of the bowl and at one side projects the handle of a pump which extends into the lower part of the pedestal.

To operate the cuspidor two or three buckets of water are poured into the base of the hollow pedestal. A tall enameled bucket which just fits the inside of the pedestal is supported above the water in the bottom of the base in such manner that a circular opening in the cover of the bucket comes just opposite the waste opening in the floor of the glass bowl.

When the bowl has been soiled a few strokes of the pump completely flush the bowl, washing all material through the opening in the center of the bowl and through the opening in the cover of the waste bucket. When all the water has been used the glass bowl is lifted off and the waste bucket taken out and emptied. By putting fresh water into the base the spittoon is ready for use.

There are several advantages to this method. First, it makes possible a perfectly clean spittoon for each patient no matter how rapidly patients follow each other. 2d, it requires that the waste water be emptied only at long intervals, once or twice in a busy day. 3rd, should it be necessary to carry the waste water through the reception room, it is enclosed in a neat receptacle of sanitary appearance. 4th, no odors attach to any portion of the appliance. 5th, the Clark Fountain Cuspidor is very ornamental owing to the heavy white enamel and the tasty decoration of the base. 6th, the mere fact of taking such pains and possessing such equipment confers distinction on any dentist. Price \$40.00. Write for information concerning it.

A. C. Clark & Co., Chicago, Ill.

C 709

BREWSTER'S PORCELAINS

Stand Pre-eminent

The Brewster High-Fusing "FOUNDATION BODY," made in eight shades, makes the strongest possible Crown and Bridge Work, and base for Inlays. It is unnecessary to use Facings in Posterior Crowns, a perfect match in color to adjoining teeth is obtained by selecting from the eight shades.

For adding to individual Crowns or Facings, to widen or lengthen them, there is no Porcelain made which equals **Brewster's "Gold Matrix Porcelain."** It fuses at 1820° Fahr., is unusually strong, adheres perfectly to higher fusing material and to metal, is most easy to manipulate, is very dense and takes a high polish. Additions to teeth with this body are made in one bake.

We manufacture a larger variety of Dental Porcelain than any other House in the World, and our special processes of manufacture ensure uniformity in the product.

THE BREWSTER DENTAL COMPANY

WANTED

Several Capable Demonstrators, to demonstrate in various parts of the Country the

BREWSTER REPLACEABLE BRIDGE TEETH

These teeth have proved a phenomenal success, are easy to work, remarkably strong, esthetic in the highest degree, and save more than their cost in solder.

The Next Classes in the

Brewster Post Graduate Porcelain School

Open December 3rd

FOR PROSPECTUS ADDRESS THE SCHOOL AT
CHICAGO SAVINGS BANK BUILDING, State and Madison Streets
CHICAGO, ILL., U. S. A.

Oxpara smiles generously at the "something else just as good" proposition, for in its field there is no real substitute.

**OXPARA CURES
ABSCESSSES**

**and the proud agent
is**

The Ransom & Randolph Co.,

Toledo, Ohio,

United States of America.

THE BIG FOUR

There are now four kinds of Weber Fountain Spittoons, and this is the first announcement of some radical changes in prices of three of them.

\$30.00 THE WEBER REGULAR. This is the one we sold at \$40.00 until we brought out the Weber Special. The Weber Regular is guaranteed absolutely to be equal in workmanship and efficiency to any other single bowl spittoon made, except the Weber Special.

\$40.00 THE WEBER SPECIAL. Just the same as the Regular only it has the overflow feature which fixes it so you can't make the water run over on your floor even if you try. If any one tells you that about any other single bowl spittoon, make him show you.

\$50.00 THE WEBER DE LUXE with double cut glass bowl. Easily the best looking thing ever made for use in a dentist's office. The outer bowl is genuine cut glass. The inner bowl stands still so the only thing the water has to do is to run down hill. You can have any color of glass you want for the inner bowl.

\$40.00 THE WEBER DOUBLE Plain Glass Bowl. An exact duplicate of the \$50.00 Double Bowl except the glass which is pressed instead of cut. All other double bowl spittoons except the Weber De Luxe have pressed glass bowls.

Above prices include chair attachment, saliva ejector, real silk covered Tubing and floor or wall connection.

Write for the big new book.

LEE S. SMITH & SON,
PITTSBURGH.

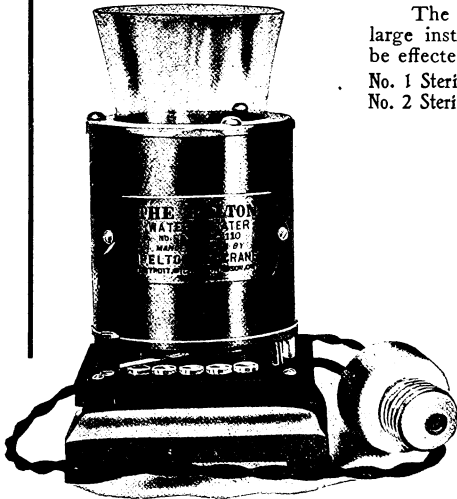


THE Sterilizer should be in the office within reach of the operator and in sight of the patient. For this reason it must be clean without a place to catch dust and dirt. Among the advantages of the Electric Sterilizers are: The absence of flame. Lack of any odor, noise or soot. Perfect control of heat at all times. Rapidity of action and extreme convenience.

The "Pelton" carries two trays, one for small and one for large instruments. It is so constructed that sterilization may be effected by either steam or boiling water.

No. 1 Sterilizer, Capacity 8 in. x 3½ x 3½, - - - - \$15.00
No. 2 Sterilizer, Capacity 16 in. x 7 x 4½, - - - - 23.00

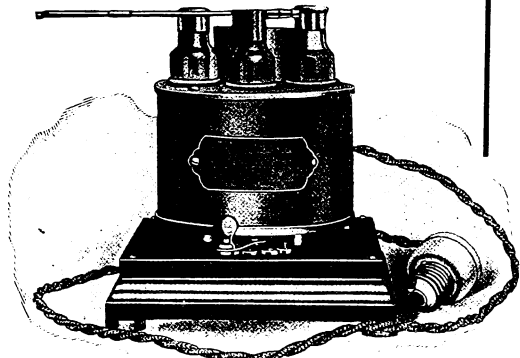
In ordering state voltage



No. 1 Single Water Glass Heater, - \$10.00
Adjustable bracket attachable to any spittoon
standard for holding glass within patient's
reach - - - - 2.50

In ordering state voltage

This Water Glass Heater has four separate heats, the current being off on the first button. Glass holds 140 C. C. of liquid which heats very rapidly on the fourth button. The lever may then be dropped back to the first button which will hold the temperature at approximately 104° F.



No. 3 Three Spray Bottle and Water Glass
Heater, - - - - \$15.00
With Three Spray Bottles, Glass and Spray
Tube, - - - - 17.00

In ordering state voltage

A neat and compact combination of a spray bottle and water glass heater which enables the operator to have ready at all times a glass of warm or hot water for syringing or rinsing the mouth.

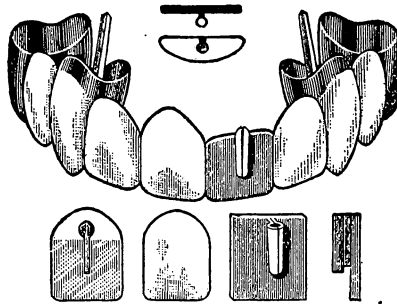
For Sale by all Regular Dealers

PELTON & CRANE

241-243 Griswold St., Detroit, Mich., U. S. A.

BRANCH, Windsor, Ontario

THE expert crown-and bridge-worker enhances his skill and workmanship marvelously by the use of Steele's Interchangeable Tooth; the novice finds his work made easy.



Strong '. Artistic '. Simple '. Economical

No checking or discoloring by heat

Interchangeable in case of { Breakage
Absorption
Incorrect shade

☞ Saves time and worry. ☞ Their merit appeals to dentist and patient alike when understood.

☞ Write for our booklet. ☞ Sold by dealers

MANUFACTURED BY

The Columbus Dental Mfg. Co.

CHICAGO COLUMBUS, O. NEW YORK
126 State St. 749 E. Long St. 36 E. 23d St.

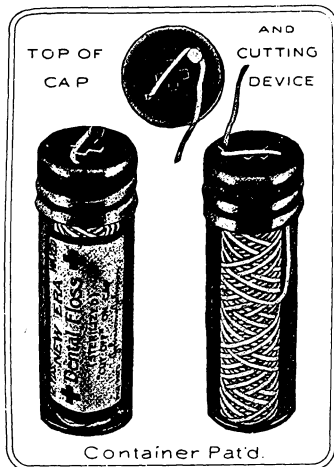
Stop and Think You want the best

NEW ERA DENTAL FLOSS

(JOHNSON & JOHNSON)

ABSOLUTELY ASEPTIC

In Glass Container With Cutting Device



Here is a new kind of floss, a flat thread with fine corrugated surface; made in a new form; put up in a new and original style package one half the size of other kinds; each and every feature being an improvement in a material that has known little change or progress in years. Two features that we continue as in our other floss are the highest grade straight silk and pure, old-fashioned beeswax for waxing.

PRICE

12 yd. wax glass containers, per doz. **\$1.25**
 24 " " " " " **2.00**
 150 " (in preparation)

NEW!—LISTER DENTAL FLOSS—

ANTISEPTIC
MEDICATION

For toilet use by the patient

Thoroughly impregnated with efficient antiseptics, combined with delicate flavoring.

Put up in a glass container with cutting device

15c. Each. Doz. \$1.50 Gro. \$15.00

JOHNSON & JOHNSON, New Brunswick, N. J., U. S. A.

FAILURES

in crown and bridge work are due to our inability to remove the enamel and properly shape the roots of the bicuspid and molars.

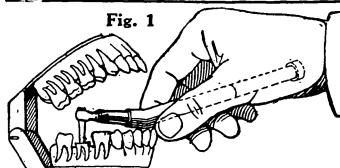


Fig. 1

Pat. Aug. 22, 1905.

“THE HARPER HOLDER” AND CLEAVER POINTS MAKE THIS OPERATION EASY

You can remove the enamel from any **bicuspid or molar** in from five to ten minutes. **Think of that for a time saver.**

You can do this without lacerating the tissue. Will this not appeal to your patient? The cone shape of the properly prepared root makes it possible to drive the band to a perfect fit, and it will always go back to its place when removed **without causing pain to the patient.**

The comfort afforded in mastication as a result of the restoration of the interproximate space will be remembered by your patient to your profit when in contact with others needing dental service.

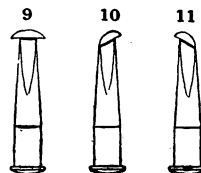
I would rather demonstrate the fact than talk about it, and would be glad to do this part of the work for practitioners if afforded the opportunity at any of our society clinics.

HARPER HOLDER, with CLEAVERS Nos. 9, 10, 11 . **\$4.50**

CLEAVERS, UNIVERSAL-9, RIGHT-10, LEFT-11, Each **.50**

Dr. WM. E. HARPER, Maker

3441 WABASH AVENUE, CHICAGO



YOU ARE IGNORANT ON THE ALLOY QUESTION

Is the Assumption of Alloy Carpet-baggers

You are told that some brand of alloy is made after a marvelous formula; that it is rich in silver, has great edge strength, is a non-contractor and makes perfect margins. It is an old story, worn threadbare by repetition. But it isn't a good alloy unless something else may be said—and proved.

It was demonstrated long ago that an alloy made after a set formula is unreliable, one ounce giving, perhaps, fairly satisfactory results, while the next has pronounced shrinkage. The slightest variation in the fineness of the several crude metals produces a variation in the resultant alloy that can not be estimated in advance.

**There is one virtue which an alloy should have
which embraces all the rest. It must be**

Accurately Balanced

This means an alloy that has positively no contraction, but an expansion so minute that it is measured by the ten-thousandth part of an inch. Such a result is possible only in a laboratory with full scientific equipment, with instruments of such delicacy that the most minute variation may be detected, and with experts whose knowledge and accuracy admit of no error. This is what we mean when we say that

20TH CENTURY ALLOY

is an accurately balanced alloy. This claim is true of every ounce We KNOW, and thereby are assured that it possesses all other virtues in the highest degree; it can't be accurately balanced and be otherwise.

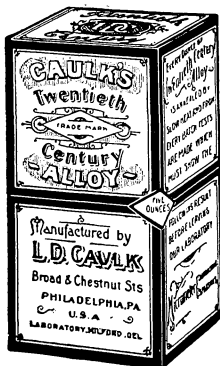
FOR SALE BY ALL DEALERS

Ounce, \$3.00; five ozs., \$12.50

THE L. D. CAULK CO.

S. E. Cor. Broad and Chestnut Streets

PHILADELPHIA, PA.



CAULK'S INLAY CEMENT

IS UNMATCHED



You know the qualities an inlay cement should have. It must have great tenacity and strength. It must be a submarine; its powder must be so absolutely fine that there is no grit, and it must possess the highest degree of durability.

Caulk's Inlay Cement is all this and more

All Dealers. 1-Col. Package \$1.00; 8-Col. Package \$5.00

The L. D. CAULK CO. S. E. Cor. Broad and Chestnut Sts.
PHILADELPHIA, PA.



500 Per Cent Profit

is about what good laboratory work pays a good dentist.

Are you desirous of securing a better paying practice?

The class of work we do will convince you that you are entitled to it and encourage you to secure it.

In sending us your work be particular as to accurate wire measurements and good plaster impressions.

Results will repay the extra care.

Send for our catalogue of good laboratory work.

Illinois Dental Laboratory Co.

67 Wabash Avenue, Chicago

Dr. M. W. Smith,
President

Reference: Bradstreet or
any Dental Depot in Chicago.



Gold Crown and Bridgework a Specialty

BRIDGES WITH REMOVABLE DAVIS
CROWNS OR PINLESS TEETH ::

Fit, Style and Finish the Best

SPECIMENS OF REMOVABLE BRIDGEWORK.

Bridge in Position

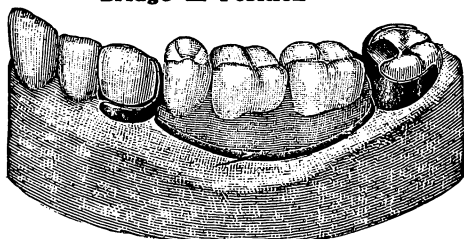
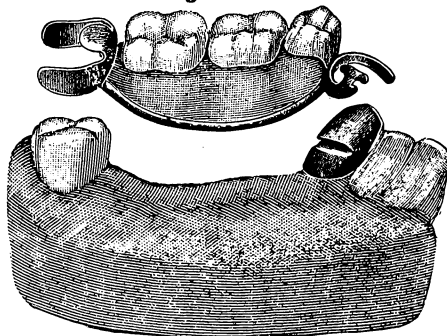


Illustration represents a practical case of a 4 Tooth Bridge with Gold Saddle and Rubber attachment; advantage is taken of a Richmond Crown in which a slot is cut horizontally to admit extension of clasp which fits snugly into same. This form of attachment can be used on almost any case.

Bridge Removed



Price per Tooth, including all material, \$4.00.

WRITE FOR CATALOGUE.

JULIUS ADERER

42d Street and Sixth Avenue

NEW YORK

DR. JENKINS' PORCELAINS

Ten years' successful experience with Dr. Jenkins' Porcelains proves conclusively their reliability and that they are to-day the peer of all Dental Porcelains. Get a bottle and use it as we direct; not as some one else directs.

THE IMPROVED ROACH AUTOMATIC PYROMETER FURNACE

This furnace makes porcelain work fascinating. You can place your work in it, start the current and feel that the result anticipated will be obtained. Get acquainted with this furnace before you spend nearly twice its cost for any other make of pyrometer furnace. Your dealer will show it to you and explain its points of superiority.

KLEWE & COMPANY'S CEMENT

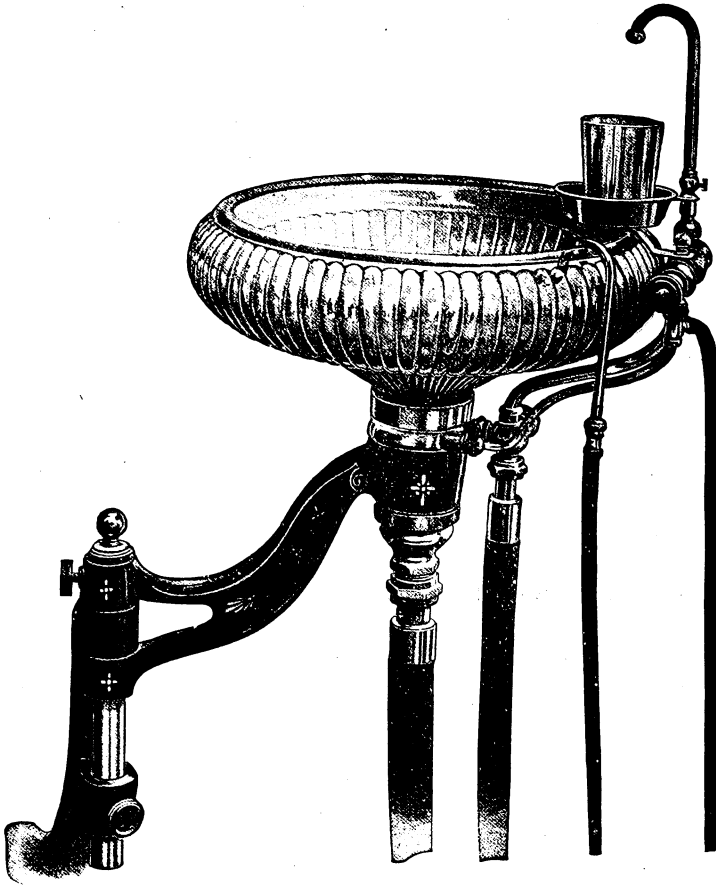
Try a sample box. It is yours for the asking. If your dealer does not have sample packages for distribution, a postal to us will bring it. It is a good cement. A worthy competitor of the best cements on the market and is made in fourteen delicate shades. It requires special mixing. We can tell you how to get the best results with it.

PORCELAIN SPECIALTIES

We have kept just a little ahead of the times in introducing and inventing materials, instruments, etc., to facilitate modern methods of handling porcelains. Many of these ideas are new and valuable. Recently published literature on porcelain work will be sent you on request. It is all interesting.

Our Goods Can Be Obtained From Dealers In Dental Supplies Everywhere

KLEWE & COMPANY (Inc.)
DRESDEN, GERMANY NEW HAVEN, CONN.



The Discerning Dentist will buy the Blair.

It operates perfectly on less water than any other spittoon made.

It is the only spittoon which washes from the very top rim of the bowl to the pit, disposing of waste by the most direct route in the shortest possible time.

It has no depressions in the bowl to catch and hold filth.

It has least metal to keep polished.

It has no soldered joints, all joints are threaded.

It is most distinctive in design, an ornament to any office.

It gives best value for the price, less money will not buy a good spittoon, more cannot buy a better.

It is the BEST SPITTOON made.

Choice, \$40.

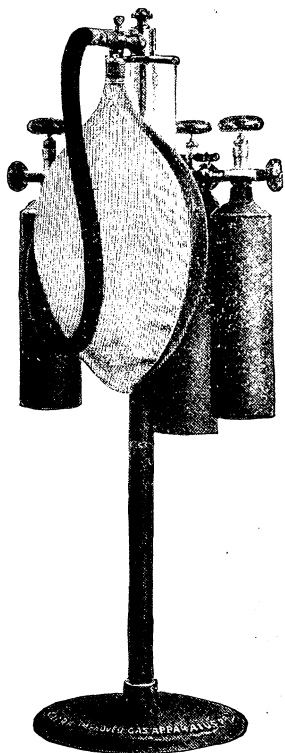
Four colors, Ruby, Green, Crystal, Amber.

MADE BY

CLEVELAND DENTAL MFG. CO., Cleveland, O.

WHAT THE IMPROVED CLARK GAS APPARATUS COMPRISES

The Improved Clark Gas Apparatus comprises everything necessary to the successful administration of nitrous oxide and oxygen for any desired length of time. It makes possible the continued and convenient use of a perfectly safe anaesthetic and avoids the dangers common to other anaesthetics and the inconvenience of their administration.



From a heavy disc base an iron standard rises which is crossed, at the height of thirty inches, by three hollow horizontal arms which support two cylinders of nitrous oxide and one of oxygen. The outer end of each arm is fitted with a screw clamp which holds the cylinders firmly in place and secures a tight joint between the end of the horizontal arm and the cylinder opening.

Each hollow horizontal arm conducts the gas to its inner end where the mixed gases pass upward into a muffle seated on top of the standard. Here the gases are perfectly mixed without the noise common to most other appliances. From the muffle the mixed nitrous oxide and oxygen pass outward through a hollow horizontal arm, passing on the way a little detachable glass flask which may be used for chloroform, ether, or other liquid anaesthetics, if it is desired to incorporate their vapor with the nitrous oxide and oxygen. The gases then enter a rubber bag, cloth covered. The distension of this bag by the gases gives sufficient pressure to compel their inhalation.

The Improved Clark Gas Outfit comprises also three hoods: one large, covering mouth and nose, and two of different sizes, which cover the nose only. Each of these hoods is of specially convenient design. For want of space they will be described later.

Each part of the apparatus is perfectly made and perfect in operation. The resulting conveniences are such as were not dreamed of a few years ago and such as no dentist should now be without. Write for a little book which illustrates and describes the apparatus.

A. C. CLARK & CO.

CHICAGO, ILL.

C 702



The Buffalo Way You Light the Gas, It Does the Rest

Equipped with the Lewis Graduated Gas and Time Regulator, the Lewis Vulcanizer does its work without causing the operator the slightest anxiety.

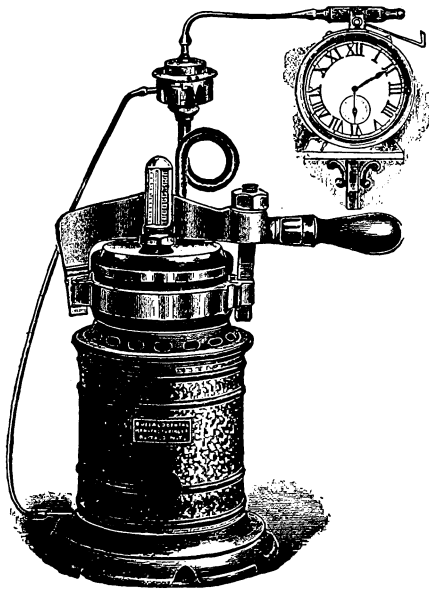
You light the gas, the Gas Regulator cuts down the flame and holds it where desired, while the Time Regulator shuts off the gas at completion of vulcanization. It adds \$8.50 to the cost of any Lewis Vulcanizer.

A two-flask Lewis Vulcanizer equipped as shown in cut lists at \$26.50. Any dealer.

Catalogue "C" is replete with vulcanizer information.

Buffalo Dental Manufacturing Co.

BUFFALO, N. Y., U. S. A.





One of the leading dentists of the United States thus describes his method of using Caulk's Abscess Cure:

Clean the canal or canals thoroughly. If there is a fistula on the gum, mix the cure very thin, and after drying canal or canals with warm air blast, pump the cure into the canal, and if possible, out through the apex into the fistula. Seal the cavity with temporary stopping and leave for two or three days. If not then healed, repeat. I have never had to make more than three applications.

In treating a blind abscess, cleanse the canal as before, force the cure into the canal only, and not through apical foramen. The mix should be of the consistency of thick paint. A gutta-percha point may be forced into the root canal, though the cure in itself makes a most excellent filling. Seal with temporary stopping until cure is effected and then fill permanently.

PER PACKAGE

\$1.50

ALL DEALERS

The L. D. CAULK DENTAL DEPOT, Inc.

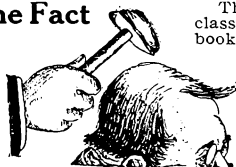
S. E. Corner Broad and Chestnut Streets

PHILADELPHIA, PA.

There Is Need to Drive in the Fact

that the use of my ads is the remedy to educate all classes of your community to the advantages and necessity of healthy teeth.

One reason you should know something about my ads—it is only the unworthy dentist who wants to discontinue to use them and find fault with them.



The positive proof that my ads cannot be classed with quack advertising, is told in my booklet, "What's Been Said Without Asking." Send a Line to get it, or perhaps you will enjoy to have "A Slice of Advertising Bread."

H. ELFERS, Dental Ad-Writer

200 E. Prospect Street, Cleveland, O.

Desk "G"

Recommended by Dental Authorities

**For BLEACHING
STERILIZING
SAPONIFYING**



(DENTAL SODIUM DIOXIDE)

per 2-oz. tin 75c. del'd, from dealers or
The ROESSLER & HASSLACHER CHEM.
100 William Street, New York

THE KEYSTONE OF HEALTH IS A NORMALLY ACTIVE LIVER

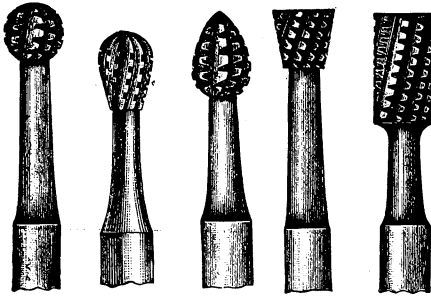
SULPHO-LYTHIN

GRANULAR AND NON-EFFERVESCENT

Is a truly reliable HEPATIC STIMULANT, INTESTINAL ANTIZYMOTIC and TOXINE ELIMINANT that REPLACES CALOMEL and is free from injurious effect under continuous administration. Sample and literature free to physicians only on request.
LAINÉ CHEMICAL CO., MANFG. CHEMISTS, 81-83 FULTON ST., N. Y.

**SULPHO
LYTHIN**

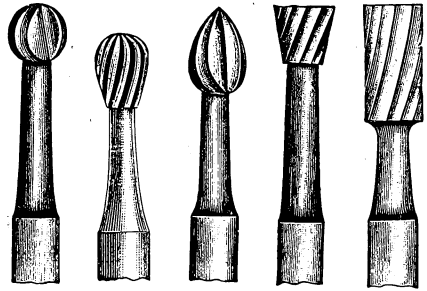
**SULPHO
LYTHIN**



"Spiral Leaf"

Ivory's Spiral Leaf and New Process Burs

THESE Burs are made of the finest steel, manufactured especially for this purpose, turned and cut by machines; they are absolutely true and accurate, and the blades are cut just at the proper angle for cutting tooth substance. Having more blades than is common with most Burs makes them smooth and even cutters, and leaves the enamel borders smooth and ready for



"New Process"

the filling. These Burs are tempered by a secret process of our own, and this is one of our strongest claims for the cutting and lasting qualities of these Burs, and in the finishing they are stoned to a razor edge.

These are some of the reasons for the superior cutting qualities of these Burs, and why we have so many testimonials as to their worth from dentists who are using them. Our object has been to make an absolutely perfect Reamer that will cut tooth substance quickly and smoothly and with the least amount of pain, and will hold their edge and shape for the longest possible time. The teeth of the Spiral Leaf Bur run in a spiral form around the head of the Bur, the teeth of the next blade cutting what the others leave. These cut enamel readily. They are made in all sizes and all styles of Hand Piece except No. 6 H. P.

Ivory Spiral Leaf Burs, sizes 1 to 8, per dozen.....	\$ 2.00
" " " " " 1 to 8, per half-gross.....	10.50
" " " " " 1 to 8, per gross in case.....	21.00
" New Process Burs, " 1 to 8, per dozen.....	1.50
" " " " " 1 to 8, per half-gross.....	7.50
" " " " " 1 to 8, per gross in case	15.00

J. W. IVORY, Manufacturer

51 North Tenth Street

PHILADELPHIA, PA.

QUALITY

In few things is it of greater importance than in a LOCAL ANÆSTHETIC to be sure that the quality is right; that you can depend upon it; that your patient will have no unpleasant symptoms; that there will be no sloughing; in a word, that the Anæsthetic is both efficient and reliable.

DR. R. B. WAITE'S

Antiseptic Local Anæsthetic

Will give you no uneasiness. The best proof that it is efficient is the fact that, notwithstanding the number of cheap imitations, our sales have amounted to over a *million ounces* during the past twelve years it has been on the market.

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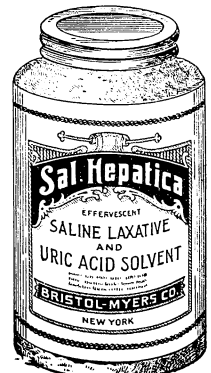
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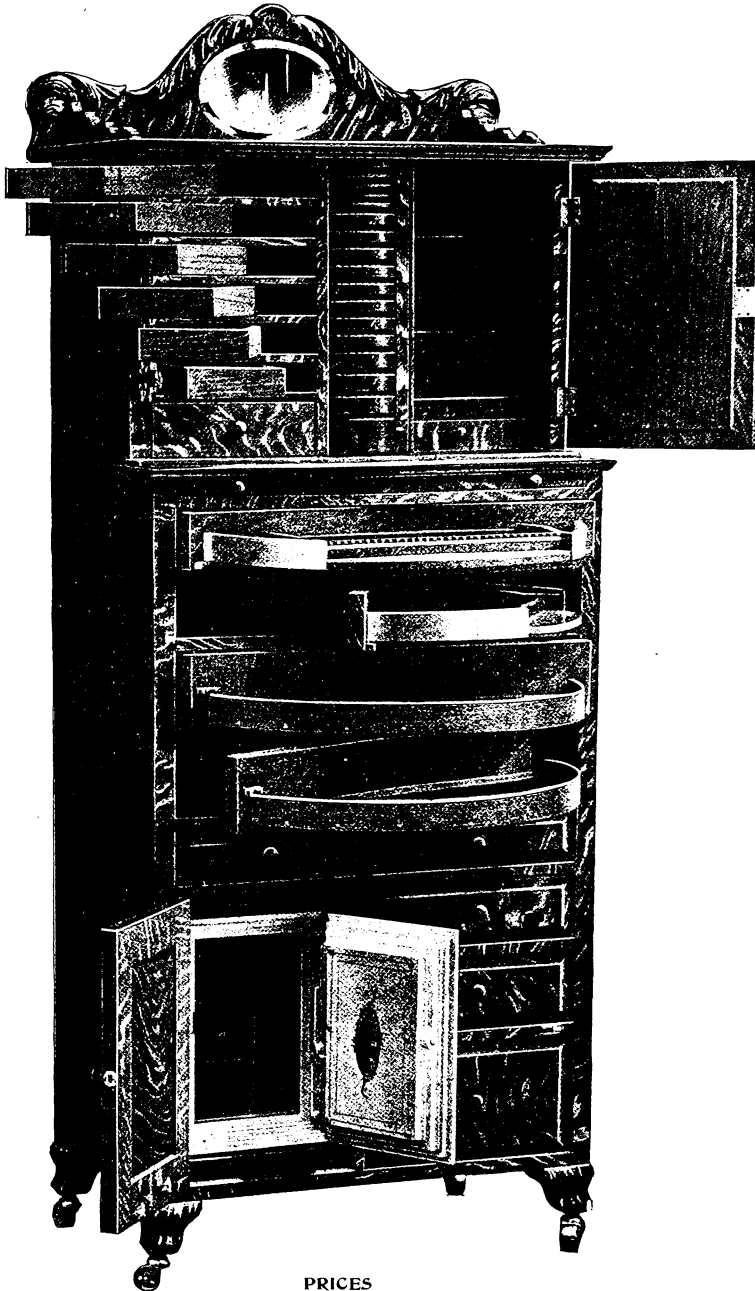


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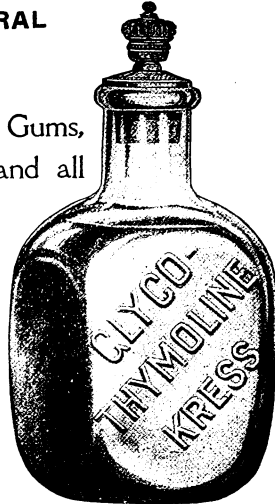
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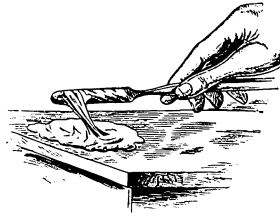
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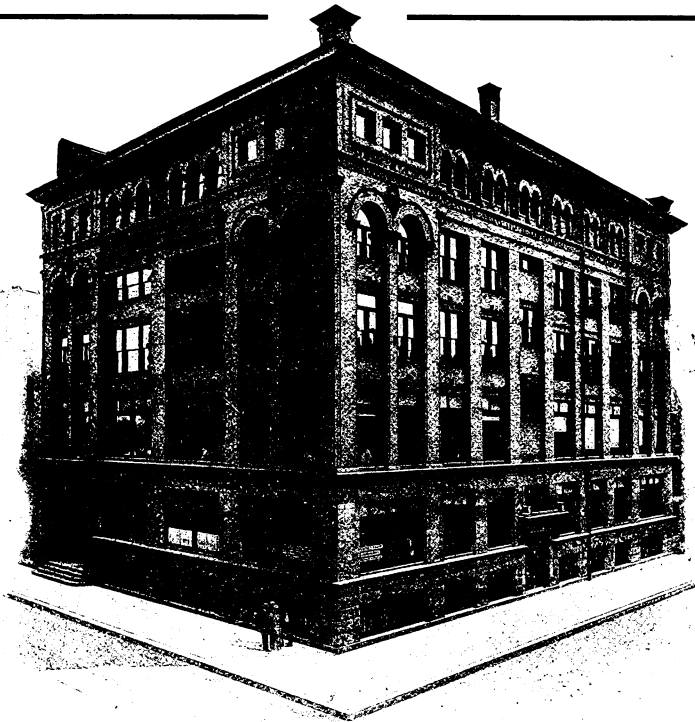
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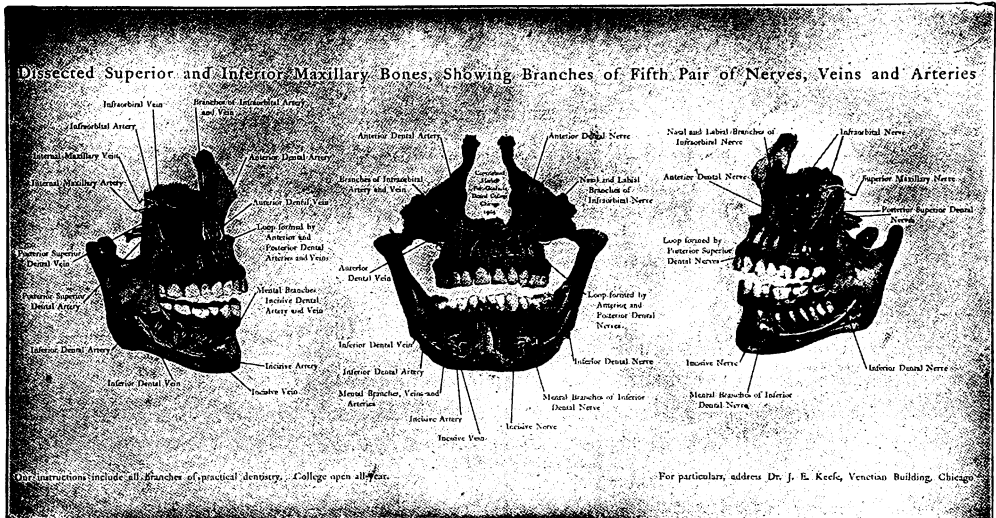
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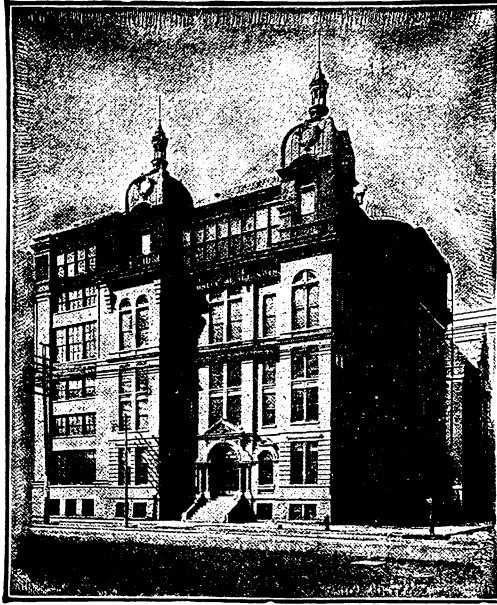
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